Small Business Management in the Artisanal and Small-Scale Gold Mining Sector

TEACHING AND LEARNING MATERIALS

APEC
Asia-Pacific Economic Cooperation

ARTISANAL GOLD COUNCIL

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Acknowledgements

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About the AGC

The Artisanal Gold Council (AGC) is a not-for-profit NGO dedicated to improving the opportunities, environment, and health of the millions of people involved in artisanal and small-scale gold mining in the developing world. Based in Canada, the AGC, has worked in over 25 countries and hundreds of artisanal and small-scale mining communities around the world on topics including but not limited to: community development, poverty reduction, formalization, mining policy, markets and supply chains, public health, environmental management, mining engineering, and human rights.

The AGC operates from the principle that improving the global artisanal and small-scale gold mining sector requires direct intervention at the community level. The AGC therefore has a long history of working with mining communities. Lessons learned, and knowledge gained from working with small-scale mining communities around the world is embedded in the design of all of our teaching and learning materials.

Find out more at: www.artisanalgold.org
# Table of Contents

Acknowledgements .................................................................................. II
About the AGC ......................................................................................... III

**Use of Teaching and Learning Materials** ........................................... 1

**Training Context** ............................................................................... 2
  What is Artisanal and Small-scale Gold Mining? ................................ 2
  Who are Artisanal and Small-scale Gold Miners? ............................... 2
  Do Artisanal and Small-scale Gold Miners Want Business Training?  3
  Understanding Your Audience ............................................................... 4

**Instructor Notes** ................................................................................. 4
  Course Preparation .............................................................................. 5
  Course Delivery ................................................................................... 5
  Course Materials ................................................................................ 6
  Intended Learning Outcomes ............................................................... 7
  Course Structure ................................................................................ 7

**General Training Agenda** ................................................................. 8

**Instructor Materials** .......................................................................... 9

**Module 1 – Course Introduction and Skills Assessment** ..................... 10
  Instructor Introduction ......................................................................... 11
  Student Introduction ........................................................................... 11
  Course Introduction ........................................................................... 12
  Business Formalization ....................................................................... 14
  Skills Required for Success ................................................................ 14
  Student Handbook .............................................................................. 14
  Program Skills Assessment ................................................................ 15
  Exercise 1.1 Initial Assessment ............................................................. 16

**Module 2 – Basic Business and Company Organization** ................. 18
  Introduction to Basic Business Terminology ...................................... 19
  Business Expenses ............................................................................. 20
  People in the Business ....................................................................... 21
  Exercise 1.1 Initial Assessment ............................................................. 23
  Exercise 2.1 Choosing a Business Idea .............................................. 24
## Table of Contents

- **Course Project: Starting Your Business Plan** ............................................................ 25
- **Exercise 2.2 Business Roles and Organization Table** ............................................. 26
- **Course Project: Update Business Table** ................................................................. 28
- **Business Problem Solving** ......................................................................................... 29

### Module 3 – Profit, Revenue, and Supply ................................................................. 30

- **Business Definitions** ............................................................................................. 31
- **Exercise 3.1 Revenue** .......................................................................................... 32
- **Profit and Revenue Streams** .................................................................................. 33
- **Exercise 3.2 Profit vs. Revenue** ............................................................................ 33
- **Exercise 3.3 Profit Margins** .................................................................................. 33
- **Exercise 3.4 Supply** ............................................................................................. 34
- **Course Discussion: Costs and Profit in ASGM** ..................................................... 35
- **Profit Optimization and Setting Costs** ................................................................. 36
- **Exercise 3.5 Profit Optimization** ........................................................................... 36
- **Business Failures and Cost Management** ............................................................. 36
- **Business Savings Account** .................................................................................... 39
- **Other Business Expenses and Operations** ............................................................ 40
- **Course Project Update. Startup, Competition, and Operating Plan** ...................... 41
- **Course Project Update. Business Action Plan** ...................................................... 41

### Module 4 – Health, Safety, and Environment ......................................................... 42

- **Health, Safety, and Environmental Management – ASGM** ...................................... 43
- **Importance of Safety Management** ........................................................................ 43
- **Exercise 4.1 Hazard Identification** ....................................................................... 45
- **Mercury and the Minamata Convention** ............................................................... 49
- **Mercury as a Business Cost** .................................................................................. 50
- **Environmental Management** .............................................................................. 52
- **Environmental Management and Community Perception** .................................... 53
- **Course Project Update. Environmental Management** .......................................... 53

### Module 5 – Securing Funding, Financing, and Investors ......................................... 54

- **Sources of Money Other Than Income Which Can Help Start/Operate a Business** ... 55
- **What Do Investors Want When Lending/Financing?** ............................................ 57
- **Interest** .................................................................................................................... 58
- **Exercise 5.1 Interest Calculation** .......................................................................... 58

### Module 6 – Basic Budgeting ..................................................................................... 62

- **What is a Budget?** .................................................................................................. 63
- **Exercise 6.1 Family/Personal Expenses** ............................................................... 64
Small Business Management in ASGM

Exercise 6.2 Preparation of Personal Budget – Income ........................................... 65
Exercise 6.3 Preparation of Budget Tracking Worksheet ........................................... 66
Budgeting and Running a Business. Small Business Budget ................................... 69
Exercise 6.4 Budgeting and Forecasting in the Supply Chain ................................. 70
Course Project Update. Group Business Budget ..................................................... 72

Module 7 – Basic Financial Accounting .................................................................... 76
Exercise 7.1 Basic Financial Accounting Worksheet .............................................. 77
Exercise 7.2 Financial Accounting Group Exercise ............................................... 80

Closing Remarks and Evaluation ............................................................................. 85

Student Materials ..................................................................................................... 86
Glossary ..................................................................................................................... 87
Worksheets and Exercises ....................................................................................... 88
Module 1. Worksheets ............................................................................................... 88
Module 2. Basic Business Terminology and Company Organization ..................... 89
Module 3. Profit, Revenue, and Supply .................................................................... 90
Module 4. Health, Safety, and Environment ............................................................. 92
Module 6. Basic Budgeting ....................................................................................... 94
Module 7. Basic Financial Accounting ..................................................................... 98
Business Plan Worksheet .......................................................................................... 108
Participant Evaluation .............................................................................................. 112
Evaluation Goals and Objectives ............................................................................ 113
Evaluation Tools ....................................................................................................... 113
Pre-training Assessment .......................................................................................... 113
Post training Assessment .......................................................................................... 113

Annex A – Sample Training Attendance Sheet ...................................................... 114
Annex B – Sample Training Certificate .................................................................. 115
Annex C – Post-training Evaluation Form ............................................................... 116
Use of Teaching and Learning Materials

This curriculum is intended to help teach fundamental business skills to artisanal and small-scale gold miners. These teaching and learning materials are designed to be “open source” meaning that they are made available freely for use by programs, organizations and institutions of all kinds working in the artisanal and small-scale gold mining sector. The AGC encourages the modification and adaptation of these materials to suit the learning needs of artisanal miners in different contexts globally. It is our hope that other organizations will use this curriculum to help build a more responsible, formal, and ultimately more professional ASGM sector worldwide. We ask that if you do use or adapt these materials, that you inform us so that we are aware of their use. An editable (Microsoft Word) version of these teaching and learning materials can be obtained in English or Spanish by contacting the AGC at info@artisanalgold.org.
Training Context

What is Artisanal and Small-scale Gold Mining?

Artisanal and small-scale gold mining (ASGM) is a predominantly livelihoods-based mining activity practiced in over 80 countries around the world. ASGM is often distinguished from large and medium-scale gold mining by its low levels of mechanization and high levels of labour input. As of 2018, it is estimated that there may be over one hundred million ASGM practitioners world-wide producing between 400-600 T of gold annually. This represents approximately 20% of the world’s annual gold production.

ASGM is increasingly recognized as a significant driver of rural development in lesser industrialized countries as well as an important sector for poverty alleviation. ASGM miners often capture upwards of 85% of the international price of gold, making ASGM an excellent mechanism for the transfer of wealth from richer urban centers to poorer rural communities. Due to its largely informal nature, ASGM has sometimes been associated with poor environmental and social practices. Notable amongst these is the practice of using mercury to amalgamate gold and separate it from its ore. ASGM is currently the largest anthropogenic source of mercury emissions and releases world-wide.

Efforts to improve the ability of ASGM to deliver transformative benefits to rural communities while eliminating some of its worst practices require a meaningful engagement with the sector by governments, civil society, the private sector and the public at large. Helping build the capacity of the sector to operate according to higher environmental, social and business standards requires not only political and financial incentives, but also support and training for ASGM practitioners.

Who are Artisanal and Small-scale Gold Miners?

ASGM can be practiced by an individual miner panning for gold in alluvial sediments or can involve enterprises employing hundreds of specialized labourers who are sometimes organized into associations or cooperatives. Being an ASGM “practitioner” could therefore refer to a wide-ranging set specialized jobs including: diggers, crushers, haulers, processing machine operators, managers and owners. Furthermore, ASGM is responsible for creating many spin-off service industries such as equipment suppliers, food services and transportation. Finally, many consider downstream members of the gold supply chain, such as gold buyers and traders to be “practitioners” of ASGM. Men and women are both involved in ASGM supply chains in nearly every country it is practiced in. Some are economic migrants seeking better livelihoods, while others are residents exploiting a resource found in their “backyard” or traditional territory.
Do Artisanal and Small-scale Gold Miners Want Business Training?

ASGM is a largely informal entrepreneurial activity that has become vital to the economic structure and fabric of many countries. In most cases, this has happened spontaneously without formal business development assistance offered by governments, financial institutions and vocational centers. Many artisanal and small-scale gold miners are eager to establish successful enterprises that contribute to their family and community’s well-being. It is for this reason that business training is often one of the services most sought by ASGM practitioners.

Business training can reinforce the ASGM sector in a number of ways. At a basic level it can help families who rely on ASGM as an income generating activity to plan, save and invest their earnings allowing the sector to better serve as a catalyst for rural development. Business skills are also essential for engaging with the formal economy. For example, registering as an ASGM business or association often requires basic record keeping and business organizational knowledge. Finally, many miners are eager to adopt better environmental and social practices including the conversion of mercury intensive gold processing techniques to mercury free equipment and practices. Often there is a sound business case for making these transitions, however doing so requires capital and investment. If ASGM is going to transition away from being a predominantly informal activity linked to social and environmental problems, and towards a formal, professional and respected livelihood activity, miners will require the financial literacy and business planning skills necessary to secure loans and seek out new investors.
This course manual is open source material. The course materials have been developed as a guideline to help steer course delivery and deliver basic business learning outcomes. It is recommended that institutions interested in delivering this training review and adapt the materials as necessary to assure that they are culturally appropriate and meet the learning needs of the particular student group in question.

Understanding Your Audience

Although it is assumed that all instructors will have some training or experience in business management, it is expected that instructor knowledge, backgrounds, experience in ASGM, and access to supporting teaching resources will vary greatly from one trainer to the next. It is therefore important for anyone delivering this course material to take into account several considerations before delivering a training. In preparation, instructors should attempt to answer the following questions:

- What does the ASGM sector in your country/region look like? Who is involved? How is gold extracted, processed and sold? What is the legal status of the sector?
- What are some of the environmental, legal and social issues faced by ASGM communities?
- What are some of the unique challenges faced by the industry when attempting to formalize?
- What are the implications for ASGM resulting from your country ratifying/not ratifying the Minamata Convention on Mercury?
- Are there any specific local challenges (e.g. availability of bank loans or investors, typical lending strategies, etc.) inherent in running an ASGM enterprise in your country/region?

The answers to these questions should help guide instructors on how to structure or modify this course to best meet the learning outcomes of their students.
Course Preparation

Before delivering the course, instructors should also take some time to do the following:

- Work through all of the examples in this guide yourself or with others so that you are ready to help the learners if they have problems.
- Ensure that all exercises have been converted to the appropriate currency.
- Adapt examples to be culturally relevant. For example, rather than using bread as an example of a basic family cost, use rice or another local food staple instead.
- If translation is required, adapt the training agenda and course material to allow for the extra time and communication required.
- Prepare additional teaching notes if needed.

Course Delivery

Delivering the course material will pose unique challenges at each location and require changes to be made. Some things to take into consideration before planning a training include:

- Numeracy rates amongst ASGM populations can be low and any arithmetic presented in this course is therefore very simple. However, if previous experience in the communities at which the training is conducted indicate that the arithmetic is still too advanced, the instructor will need to adapt the course material and presentation method. An example may be to prepare fake “money” that looks like local currency. Using hands on methods with familiar visual props will help students understand the examples better.
- If literacy rates are low, the student workbook may be difficult for student groups to complete in a self-directed manner. Workbooks may then have to be completed by the whole class with the help of the instructor.
- Many miners attending the training will engage in other livelihood activities in addition to ASGM. It is important to understand the entrepreneurial interests and needs of those in mining community more broadly than simply those directly related to ASGM. Practical examples have been included in this workbook to illustrate this.
- Many students will not be accustomed to sitting in classrooms for long periods of time. Although this course has been presented as a structured classroom session to be delivered over a period of two consecutive days, in many cases it may be more practical and beneficial to deliver the course in smaller periods of time spaced out to allow for better knowledge retention. For example, a good delivery structure may be 4 separate classroom sessions of four hours each delivered over a two-week period.
- Many students will be unable to take time off work to attend classroom learning sessions. In these instances, shorter classroom sessions are extremely beneficial, as they can be delivered after work hours or potentially during mid-day work breaks. The trainer should be adaptable and willing to accommodate the students’ schedules.
- Training locations will vary by community, availability, and class sizes. The course material has been developed to accommodate many different training locations and is not reliant on digital technology or the availability of electricity.
• Gender equity in participation will be affected, amongst other things, by the time and the location of trainings offered. For instance, if people have to travel to attend and therefore can’t use existing childcare networks then they are unlikely to participate. Thought should be given to how to offer childcare or how to design the course so that people with family responsibilities (often women) can participate.

• The space for the training should be free from noise and distraction. Wall space to hang up notes and demonstration exercises is important.

• Effective course delivery is dependant on comprehension and retention by the students but also on the ability of the trainer to address the interests of the students. The course is designed to allow the trainer to get to know students. If students show an interest in learning more about a specific topic the instructor should be prepared to change the course material “on the fly”, including changing examples and demonstrations, to better suit the needs of the students.

### Course Materials

Teachers should be prepared to bring certain classroom materials with them for the class to use. This may include:

- ✓ Enough pens/pencils/markers for everyone. Pencils with erasers are best for the students so that they can correct any mistakes made in their workbooks as they fill them out.

- ✓ Calculators (if students are familiar with them)

- ✓ Simulated money in the local currency (if using)

- ✓ Notepads for group work

- ✓ Big flipchart paper

- ✓ Markers for the instructor(s); and

- ✓ Printed copies of student materials (see the Student Materials section of this curriculum) This includes the worksheets, exercises and business plan worksheets contained in this section.

- ✓ Personal teaching notes

- ✓ Printed copies of the evaluation materials

- ✓ Course attendance sheets

- ✓ Course certificates for students (if using)
Intended Learning Outcomes

This is an introductory level course on basic knowledge, skills and attitudes that will enable artisanal and small-scale miners to run more sustainable, responsible, and profitable enterprises. Key knowledge outcomes include financial literacy. Skills outcomes will include hard and soft entrepreneurial skills such as budgeting and accounting. Attitudinal training will focus on seeing ASGM enterprises as responsible community actors.

By the end of the two-day course, participants should be able to do the following:

1. Understand basic business terminology
2. Articulate how small ASGM businesses are organized
3. Understand some of the common reasons that a small business thrives or fails
4. Understand how business decisions affect worker health, safety and the environment
5. Understand potential sources of financing for a small-scale mining enterprise and strategies to attract investment
6. Demonstrate the ability to construct both a personal and a small business budget
7. Demonstrate basic accounting skills
8. Demonstrate the ability to construct a basic business plan

Course Structure

This course is designed around 7 learning modules, each covering a different business management theme. Most of these modules can be taught independently of each other and can therefore be mixed and matched depending on the learning interests and needs of students.

Each module contains three components:

1. **An explanation of key concepts and ideas.** This is often done via group discussion facilitated by the teacher and drawing on the experience of students in the class. The teacher may rely on the training materials herein to guide these discussions, or may bring their own experience and/or other teaching materials to help guide discussions

2. **Module exercises.** These are done either by students individually or in groups as required. The module exercises are meant to further demonstrate concepts and develop key skills as the course progresses. All module exercises are included in the section Student Materials – Worksheets and Exercises which each student should be given a copy of.

3. **A business plan development exercise.** Module by module, students will apply knowledge and skills gained in the development of a course-long project: a business plan for a fictional non-ASGM business. Work on the business plan will be done in groups. Since the complete business plan requires the completion of all modules, courses that do not teach all of the modules will result in incomplete student business plans. Each student should receive a copy of this workbook which can be found in Student Materials – Worksheets and Exercises.

It is recommended to cover the modules in the order presented herein if the course-long project is intended to be completed.
# General Training Agenda

*Note that the following agenda is a guideline only. It is recommended that the complete curriculum be delivered over a minimum of two days; however more time can and should be allocated depending on the interests, availability and learning needs of participants.

**Draft Classroom Training Agenda**

<table>
<thead>
<tr>
<th>Day 1</th>
<th>Mins.</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30 – 09:00</td>
<td>Presentation of participants and training agenda</td>
</tr>
<tr>
<td>09:00 – 09:15</td>
<td>Student Evaluation pre-test/Course Objectives</td>
</tr>
<tr>
<td>09:15 – 09:30</td>
<td>Module 1 - Introduction to the training</td>
</tr>
<tr>
<td>09:30 – 10:00</td>
<td>Module exercise, questions, discussions</td>
</tr>
<tr>
<td>10:00 – 10:15</td>
<td>TEA BREAK</td>
</tr>
<tr>
<td>10:15 – 10:45</td>
<td>Introduction to Module 2 – Basic business terminology</td>
</tr>
<tr>
<td>10:45 – 11:45</td>
<td>Module 2 workshops – Business organization charts and roles</td>
</tr>
<tr>
<td>11:45 – 12:45</td>
<td>LUNCH</td>
</tr>
<tr>
<td>12:45 – 13:15</td>
<td>Introduction to Module 3 – Profit, revenue, supply</td>
</tr>
<tr>
<td>13:15 – 13:45</td>
<td>Questions and discussions – ASGM Specific supply needs and profit/expense streams</td>
</tr>
<tr>
<td>13:45 – 14:15</td>
<td>Exercise 1 – Profit calculation</td>
</tr>
<tr>
<td>14:15 – 14:45</td>
<td>Exercise 2 – Supply management and supplier selection</td>
</tr>
<tr>
<td>14:45 – 15:00</td>
<td>TEA BREAK</td>
</tr>
<tr>
<td>15:00 – 15:45</td>
<td>Introduction to Module 4 – Health, safety and environment</td>
</tr>
<tr>
<td>15:45 – 16:00</td>
<td>Questions and Discussions – Importance of health, safety, and environmental management including the Minamata Convention</td>
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<tr>
<td>16:00 – 16:15</td>
<td>Exercise 1 – Hazard identification</td>
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<td>16:15 – 16:30</td>
<td>Exercise 2 – Scenario: Site management and housekeeping</td>
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<tr>
<td>16:30 – 17:00</td>
<td>Introduction to Module 5 – Funding, financing, and investors</td>
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<tr>
<td>17:00 – 17:30</td>
<td>Daily wrap-up, summary</td>
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<table>
<thead>
<tr>
<th>Day 2</th>
<th>Mins.</th>
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<tbody>
<tr>
<td>08:30 – 09:00</td>
<td>Introduction to Module 6 – Basic budgeting and business management</td>
</tr>
<tr>
<td>09:00 – 10:00</td>
<td>Basic budgeting and business management exercise – Personal budget Part 1</td>
</tr>
<tr>
<td>10:00 – 10:15</td>
<td>TEA BREAK</td>
</tr>
<tr>
<td>10:15 – 11:00</td>
<td>Basic budgeting and business management exercise – Personal budget - Part 2</td>
</tr>
<tr>
<td>11:00 – 12:00</td>
<td>Basic budgeting and business management exercise – Small business expenses Part 1</td>
</tr>
<tr>
<td>12:00 – 13:00</td>
<td>LUNCH</td>
</tr>
<tr>
<td>13:00 – 13:45</td>
<td>Basic budgeting and business management exercise – Small business expenses Part 2</td>
</tr>
<tr>
<td>13:45 – 14:15</td>
<td>Introduction to Module 7 – Basic financial accounting</td>
</tr>
<tr>
<td>14:15 – 15:15</td>
<td>Basic financial accounting - Exercise 1 – Class example</td>
</tr>
<tr>
<td>15:15 – 15:30</td>
<td>TEA BREAK</td>
</tr>
<tr>
<td>15:30 – 16:30</td>
<td>Basic financial accounting - Exercise 2 – Group project</td>
</tr>
<tr>
<td>16:30-17:15</td>
<td>Closing remarks/course evaluation</td>
</tr>
</tbody>
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Instructor Materials
Module 1

Course Introduction and Skills Assessment
The purpose of this module is to introduce the instructor, the students, the learning objectives, and the structure of the course. This section should take around 1.5 hours when considering periods for discussion and sharing and will allow the instructor to determine the numeracy and literacy levels of students in the class. There will be simple exercises involving some arithmetic and reading to help in the selection of appropriate future exercises.

**Instructor Introduction**

Introduce yourself. If helpful use some or all of the following talking points:

- Your name;
- Description of your family;
- Where you are from and where you currently live;
- What you do for work and what you studied in school/what your favourite class was;
- What your hobbies are and things you do for fun;
- What you want to learn about the community you are in, from the students, your interests in their work, what brought you here; and
- Anything else that would help you connect on a personal level.

If you are using a translator or local partner to help teach the course, have them introduce themselves at this point using similar talking points.

**Student Introduction**

Have the students introduce themselves, ask them questions if they are quiet or shy, using some of the following prompts:

- Name, how many people in their family;
- What they want to learn from the course;
- What they currently do for work; and
- Anything else they would like to say.

This can also be used as an opportunity for the instructor to learn more about the site-specific operating conditions and how the ASGM operations are structured. It can be used to question payment structures (hourly or pay per production) and management structures (co-op or independently owned), or other operational considerations.

Ask the students where they think they would most benefit from the course in their work and their day to day lives. Structure this as a class discussion to see what areas of study they feel are most relevant to their lives/businesses. This will allow you to use contextual examples as the course progresses and tailor the course to the students’ needs.
Course Introduction

Once everyone in the class has introduced themselves, introduce the course and the various topics to be covered.

Topics and learning objectives of this course include:

4. **Course Introduction and Student/Instructor Introduction** (1 hour)

5. **Basic Business Terminology and Organization** (1.5 hours)
   In this section we will define what a business is, important business components and things that make up a business, discuss some common words and phrases businesses use when describing their operations, how small businesses are organized and how this helps maintain efficient operations.

6. **Profit, Revenue, and Supply** (2 hours)
   - Basic business terminology will be expanded in this section and some examples will be presented which utilize the terminology to further enforce the concepts.
   - Different costs and expenses common to small businesses will be discussed, and how to account for these expenses in business operations and pricing models.
   - Setting prices of items to ensure healthy profit margins will be a major focus of exercises in this module.

7. **Personnel, Health, Safety, and Environmental Management** (1 hour)
   - We will discuss the important of health and safety in the workplace, as well as ensuring proper environmental management, why these topics are important from a legal and formalization standpoint, how they can also impact business expenditures and affect public perception resulting in lost income potential.
   - This module will also discuss how maintaining a safe and healthy work environment not only benefits the employees directly, but also can lower expenses due to decreased training and labour costs.

8. **Funding, Financing, and Investors** (1 hour)
   - Obtaining loans and capital when starting a business is one of the biggest hurdles to overcome for any small business worldwide. In this section we will discuss the importance of record keeping, business plans, proper financial management, and how these items can impact the availability of loans and capital when starting your business. We will also discuss potential sources of loans/capital, their benefits, and their drawbacks.
   - Depending on the abilities of the class, this section may include how loan repayment works, interest accumulation, and will work through several examples which show loan repayment structures and how interest accumulates over time. This is up to the discretion of the teacher. You will work through a few basic examples illustrating how interest affects your businesses income due to increased expenses and will discuss when borrowing money is appropriate and alternatives to borrowing money.
9. **Basic Budgeting** (3 hours)

- This section will deviate from the topic of small businesses into the topic of personal and family budgeting, however, it is important to note that a personal budget is not substantially different from the budget for a small business; the main difference being income streams and expenditures.

- This section will introduce the concept of a budget and its importance in the household, the importance of tracking spending and income over long periods of time, and how to account for unexpected expenditures.

- The importance of budgets in small businesses will be highlighted, as well as reasons that investors and money lenders want to see a budget in a business plan. Each student will work through a family budget for one year, and the instructor will act as a narrator guiding the students through the different scenarios that will affect the budget throughout the year.

10. **Basic Financial Accounting** (3 hours)

- This section will explain the differences between a budget and financial accounting and reiterate the importance of both a budget and financial accounting from a small business perspective.

- In this section the class will work on a problem in which they will act as the financial accountants for a small ASGM mine over a two-week period and will perform calculations on a daily and weekly basis on the business expenditures and expenses in order to calculate profit. The scenario will involve daily fluctuations in income and expenses to highlight the importance of cost and income tracking.

**Final Wrap-Up And Course Summary**

This section will allow students to ask additional questions and will provide the instructor an opportunity to reiterate important points from the class and lessons that should be taken home. This is also the time for the class to complete course evaluation questionnaires to provide feedback regarding the course delivery and material.

Once the overview of topics has been completed, highlight the importance of these skills and knowledge, not only for running a business, but also for family financial planning. Some points to highlight could include:

- Understanding basic business principles and methods may help students become more efficient in running their business but can also help with their personal financial situations. Better efficiency means more money generated from the business activities and therefore better payouts for everyone involved. These principles can be translated to your home life in that you can identify places to save money on food and expenses, and therefore increase your savings (profit).

- In addition, as will be discussed in more detail later, many investors/lenders will require a well documented business prior to providing funding for operations. Since growth requires investment, this is an important consideration for miners to understand.
Business Formalization

A key lesson/idea to be taught throughout the training is the idea of formalization. Formalization is important for the following reasons:

- Formalization requires engaging with government and gold buyers as an enterprise that has a plan for how it wants to do business, that can communicate that plan and that maintains good records. These are all basic business skills.
- Access to lenders to acquire loans and other forms of financing will require good book-keeping and record keeping.

Skills Required for Success

Students attending the class may feel that they do not have the skills necessary to succeed in running a business, however, this is not the case. Small business ownership and management does not require any special skills beyond basic money and personnel management; many of the skills required are already practiced by students in everyday life. Highlight some skills the students already have which help successful businesses run:

- Budgeting for their family (money management);
- Saving money to buy a big item (budgeting and saving);
- Knowing prices and finding deals (market knowledge); and
- Working in teams at work (personnel management).

All of these are some examples of skills required of a business owner/manager, and only require a change in application rather than learning a new skill.

Student Handbook

At this point it is a good time to introduce the student handbook. These materials will be referenced multiple times throughout the course and should be kept close at hand by students. Do not introduce the course project (developing a business plan) itself, as that will come later in the course and introducing it at this point in the course may confuse students. The program skills assessment is included in the course handbook and will be used in the next section. For reference purposes:

1. Glossary - Throughout the course we will introduce some words which are used in business conversation on a regular basis. A quick reference glossary is provided at the start of the student workbook for reference by the students throughout the course. Business terminology is included as well as a short definition of the word. As new terms are introduced throughout the course, the instructor should highlight these terms in the glossary, so students can acquaint themselves with them.

2. The student handbook (Annex) contains worksheets to be filled out at various points in the course, as well as the class project which involves the production and development of a business plan in a group over the course of the training. The business plan will incorporate things learned in the course and will be using the business plan template presented in the student handbook. Hand out copies of the student handbook to every student now; however due to varying literacy levels among the students, it is possible that students will prefer to complete the handouts together rather than each student doing it on their own. Each module of the course will add something new to the business plan based on what students learned in that module.
3. The course project is designed such that each group will have a fully developed business plan at the end of the course. This business plan will be developed gradually as new topics are introduced to the class. It will be something they can take with them and will incorporate all important aspects of running a business, from basic things like creating a business idea to complex concepts like health and safety considerations and financial accounting.

4. Since this course has been developed for low literacy audiences, it is highly likely that some components of the student workbook, including aspects of the business plan, may be too difficult to complete on their own. In order to avoid alienating those students, it is recommended that the class be split into groups of 4-5 people who will then work together over the next two days on the course workbook. In this way, there is a good probability that someone in each group will be sufficiently literate to complete the exercises, and those low-literacy students will still be able to participate actively.

Wait until after the program skills assessment to split the class into groups so that you can place lower literacy students with those having a better understanding of reading/writing.

**Program Skills Assessment**

The skills assessment can be found in the section: Student Materials – Worksheets and Exercises: Module 1 Worksheets. The purpose of the skills assessment is to determine literacy and numeracy abilities of the students are.

This exercise should be attempted by students individually but discussed as a group; this will allow you to create groups for later exercises composed of both literate and less literate students. Be sure to highlight the fact that you are available to help students who struggle with even these exercises; you do not want students to be frustrated with the first exercise presented to them. All exercises later in the course should be done in groups to promote discussion and cooperation; explain to the students that this is much like how a business operates. It is okay if students don’t understand these worksheets, they are intended to serve as a baseline to see how the instructor can tailor the rest of the course. If there is a high level of understanding, you can present more difficult exercises. If there is a low level of understanding, you will rely on more visual aids and discussions for exercises, and many of the advanced exercises may be omitted from teaching.

Ask students to do the first set of arithmetic and Problem 1 first, then discuss the answers as a group or work through them together. If they show a high level of understanding, then ask them to complete Problem 2 after the discussion. If the majority of students (more than 3 in 5) struggle with problem 1, work through problem 2 on the board or flipchart as a group. If at this point you are required to work through problem 2, the instructor should be prepared to make adjustments to the rest of the course such that any numerical based questions should be worked through as a group together rather than in their individual groups.

Discuss why a very basic understanding of math is important in business practices and discuss how these basic skills can also translate to everyday life with the following questions:

- Where can I use these skills? (shopping, making sure you have enough money to buy essentials, determining how much you have to save for an important item, etc.);
- Where in a business would these skills be used? and
- Explain how these basic skills can be used to calculate things like interest payments and paying suppliers appropriately.
Now that the instructor understands the knowledge level of students, it is time for the students to express their opinions on which skills students feel they need in order to start or grow a business. The purpose of this exercise is to:

- Help the instructor gauge student’s capabilities outside of the business topic; and
- Propose follow up training that is more customized to a particular groups’ training needs (e.g. computer skills, marketing skills, etc.).

This section could be run as a focus group session with the following prompting questions:

- What do you want to learn from the course?
- What things do you wish you knew or could do that might make your business/personal financial management stronger?
- Where do you think you would benefit most from this course in your day to day life?

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**Exercise 1.1**

**Initial Assessment**

1. Please find the solutions to the following problems; if you have a calculator, you may use it:

   - \[34 + 72 = \]
   - \[121 - 63 = \]
   - \[20 \times 6 = \]
   - \[144 \div 6 = \]
   - \[200 \times 0.2 = \]
   - \[800 \div 20 = \]

2. Please calculate the final cost of two items:

   a) Item 1 costs $12, and Item 2 costs $6.50 (adjust for local currency). Each item is charged a 10% tax on the final price of the item. How much tax needs to be paid for each item?

      - Tax Item 1: 
      - Tax Item 2: 

   b) How much does each item cost after tax (final cost)?

      - Final Cost Item 1: 
      - Final Cost Item 2: 

Module 2

Basic Business and Company Organization

Photo credit: Red Social
The purpose of this module is to build a basic understanding of what constitutes a business as it relates to ASGM, what important business aspects relate to ASGM, and how an understanding of these concepts can help increase gold production, reduce costs, and generate profit.

**Introduction to Basic Business Terminology**

Have a discussion on the following topics and explore them as a group. Each of the below topics should be introduced to the class in discussion format, and the answers should be provided by the students via this discussion; it is intended to allow the students to be actively engaged in this component of the training.

**What is a business as it relates to ASGM?**

ASGM is a unique business in that it is mostly informal but still employs millions around the world and influences the world economy. ASGM produces approximately 20%-25% of the world’s gold annually, and often operates without formalization or business licenses from the governments of the areas in which they operate. In terms of ASGM, a business may be anything as small as a person panning for gold in the river to sell to a local buyer, all the way to large operations that employ hundreds of people. Outside of ASGM, a business is defined as “any enterprise whose primary goal is making a living/making money by engaging in the sale, production, or distribution of a good/service”. ASGM is a business as it is producing gold for sale to processors and markets, generating income, and sustaining families/individuals in the region.

**What are the goals of a business in general and how does an ASGM business meet its goals?**

Ask the class the above question and see what answers they come up with. The answers here may focus on the obvious (profit and money), however, it is important to recognize that ASGM businesses have a role in building communities. For instance ASGM activities often lead to mining “booms” whereby communities grow and experience an influx of people and even wealth. ASGM activities often create complimentary jobs in the local economy such as mechanics, food services, transportation services, etc. By incorporating the idea of a sense of community, all students will feel included in the discussion, and by encouraging this idea of community it will allow the students to consider actions of a business that affect the community around them (i.e. environmental and health aspects).

Once the class has gotten the obvious answers out of the way, ask the class to consider things other than money. Feel free to offer prompting questions which may include:

1. What if the business owner is from the community and is employing friends, family, and other members of the community?
   - This will help them understand that other goals may be to provide employment to community members. The more people employed in the community, the more the community thrives.
   - In addition, by employing community members, the business owner is directly impacting the skills pool of that community.

Topics to be discussed include:

- Business goals and components;
- Business expenses;
- Basic business structure and different ways that ASGM enterprises can be organized; and
- Business formalization and benefits of formalization.
2. What if the business owner saw a problem in the community and wanted to fix it?
   - Some ideas here could be perhaps cleaning up an environmental problem (trash collection business) or in the case of ASGM, a desire to reduce pollution from mining. This could result in a business whose goal is to use cleaner processing methods.

3. What if the business owner is very ambitious?
   - In this case, his/her goal may be to grow the business and expand. This directly relates to making more money, but the owner may also gain a sense of pride and accomplishment from his business’s success.

Except in special cases, the primary goal of a business is to make money or generate a profit, however, the above are important secondary goals to highlight. Since the primary goal of a business is to make a profit, one of the key concepts we will highlight is reducing business expenses.

**Business Expenses**

Ask the class what kinds of things cost money in an ASGM business. Some examples the instructor can provide if the class is stuck are included below:

- Employee wages.
- Equipment/chemicals to process gold.
- Rent and utilities
- Gasoline for generators
- Buying ore from miners, if the local payment arrangements are set up that way.
- Permits and taxes (if business is formal) – If this is not mentioned, the instructor should take care to mention it at this point.

Since the instructor should have mentioned the expenses generated from permits and taxes, now is the ideal time to introduce the concept of business formalization.

Formalization of a business requires that businesses become compliant with relevant local and national laws and regulations. This may involve registering the business and obtaining a business licence, obtaining relevant environmental and operational permits, keeping business records, and accommodating the monitoring of business activities by the state.

One of the main questions students may have at this point is whether or not formalization is worth it if it requires a time commitment, cost and restrictions to the operation. Students may think that operating as a non-formal business is advantageous. This question will be addressed in greater detail in various modules within this course, however, the potential benefits of formalization include:

- Increased access to reputable lenders and financiers if the owner desires to grow the business with more efficient equipment.
- Secure title to the land being mined (depending on the formalization process in the country of question).
- Reduced risk of government shutdowns of the mining site. This is a common problem at mining locations where governments will intervene to shut down ASGM operations for several weeks, months
or even indefinitely. Even if operations resume upon government departure, downtime represents a significant lost income stream for workers and owners.

- Increased access to reputable gold buyers and suppliers of equipment which can increase profits and reduce operating costs.
- Indirect benefits such as improved environmental and social conditions in the workplace which will have positive impacts on the health of workers and the community as a whole.
- In some cases the state will offer supports such as geological services, business development services or financial services to formalized businesses.

Besides operating expenses and equipment expenses, other major considerations which need to be accounted for in a business are the “human components”.

People in the Business

A business is made up of some obvious components such as the employees and the boss, however, other external human components need to be considered when discussing a business and the source of income and expenses. Start the discussion by writing the word “Business” in the centre of your flipchart, whiteboard or blackboard. Ask the class what they think are the important human components of a business and who can affect how a business operates, its income, and its expenses. Write their answers down surrounding the central word “business”.

If the class needs some ideas to start the discussion, list a few of the following items on the board. It is not the goal here to discuss only ASGM businesses, but business in the general sense.

- Customers;
- Suppliers;
- Investors;
- Owners;
- Employees;
- Advisors and Government;
- Contractors/outside help.

Once you have a sufficient number of different business components written on the board, ask the class which way money is transferred for each component. Draw the flow of money with arrows indicating the direction. These arrows differentiate between the expenses a business incurs as a result of the human component, and the income streams for a business from the associated human component. Try and use different colours for expenses and incomes so it is easy to visualize the difference.

Have a discussion regarding some examples of income or expenses that are generated from each human component of the business. Try discussing these from an ASGM standpoint first, but also ask the class for some examples from non-ASGM businesses following the ASGM discussion; time is limited so limit this discussion to one additional industry, such as a food vendor/convenience store. This discussion will help those who have ambitions outside of ASGM feel included and keep course material relevant for all.

Once we have discussed the external human components, we can now discuss the internal human components which drive a business’ success.
What are some different roles involved in running an ASGM business?

Another human component in a business are the people who actually run the business and provide the service. Ask the class who is involved in running an ASGM business and have a discussion involving the various responses. Here we are taking the general idea of human business components discussed in the last section and relating it to more ASGM specific scenarios; since ASGM businesses typically have few customers (i.e. gold buyers) it presents a unique business scenario. Some prompting responses could include:

- Owner
- Managers
- Employees
- Employee’s families
- Gold Buyers

As the students are providing answers, it is a good idea to ask the class what kinds of responsibilities each answer has in terms of running an ASGM business. These do not need to be written down, but by discussing this topic early in the training, it ensures that everyone in the class has the same level of understanding of positions and responsibilities within their own industry and will also allow you as the instructor to understand how local ASGM operations are typically organized.

Since businesses vary greatly from industry to industry, and since this course is not intended to focus solely on ASGM, the instructor can draw a diagram showing different roles as businesses get more complex. Starting with a simple small business, include the following items: owner, employees, customers. From this you can branch out and put other positions in between the already listed items. For example, adding in a manager between the owner and the employee introduces a new level of employee, or including the idea of contractors outside of the standard company infrastructure.

Why are each these roles important to business success?

Ask the class why each of the roles listed in the previous discussion are important and discuss the different responses. The following points should be highlighted after the discussion:

- Everyone plays their part and hard work from everyone in the business will help contribute to a successful operation.
- The business structure includes rules for things like delegation of duties.

Generally speaking, few businesses can be run by a single person alone and they therefore require the cooperation and teamwork of a large number of people. Even a small operation with less than 5 people would not operate efficiently if everyone wasn’t working towards the same goal.
Course Project Introduction
The Business Plan

One of the earliest exercises any prospective business owner should undertake is the preparation of a business plan. A business plan is a tool used by prospective business owners to gather all of their business ideas, known business requirements such as expenses and employees, basic operational plans, and any other pertinent information that will help the business owner evaluate whether the business idea is appropriate or not. More importantly, the business plan is an effective tool used to show potential investors and financiers that you have put work into the idea and will help them evaluate whether you are a good candidate for a loan.

A business plan includes all of the elements that are being taught in this course. As such, each exercise will start by using the business plan template that has been prepared in advance (see Student Materials – Business Plan Worksheet). This business plan will incorporate all aspects of lessons taught in the course and will be built upon module by module. By summarizing the course material in this fashion, it allows the students to apply the knowledge to a real-world scenario and will provide them with something they can take home with them and use as a reference for the future if they ever wish to apply any of the skills they learned.

In order to allow students who may have lower literacy/numeracy skills, the class should be divided into groups at this point. If the literacy/numeracy levels are evenly distributed and there is sufficient people in the class who can help others, then the students may want to form groups on their own. If there is a substantial number of students have low literacy/numeracy as determined from the Program Skill Assessment from Module 1, the teacher should be prepared to make groups to ensure each group has at least one person who can read/write to a sufficient level.

If students are unable to read and write, they can still work with the other group members on the business plan. Ideally each group will have one or two people who can read and write and can record group discussions and summarize their ideas on the worksheet. Throughout the course different people from each group will be given the opportunity to share the various components of the business plan with the rest of the class as they work through them. The important part is that group members are able to participate with the others and share ideas, as this will help them retain knowledge.

Once the students have reorganized into groups, the first step is to explain to the class what a business plan is and why it is important. Use some of the talking points below and the definitions above to help you describe its importance:

- A business plan is a tool that is used when starting a new business to help you plan for the future and make sure that your business is well thought out before you attempt to start operations.
- It includes description of your business goals, operations, area of service, and even your company name.
- It help you take an inventory of all of your assets (cash, equipment, sources of financing).
- It helps you decide if you need a loan or need to look for investors.
- It will help you to think of which tasks are required on a day-to-day basis when operating the business, including how many employees you will need and how to manage those employees.
- It will help you explain your business to others, including potential investors/lenders. If you want to apply for a bank loan you typically must have a complete business plan.
- The most important part about a business plan is thinking ahead and considering potential costs and major purchases which will affect cash flow.
Exercise 2.1
Choosing a Business Idea

The first step in starting a business plan is to choose a business idea. Ask the class, in their groups, to think of 5 different business ideas. In order to allow the students to think outside of the box and gain insight into industry outside of ASGM, students should be encouraged to think of businesses that are not ASGM mines or processing centers. This could include grocery stores, a bakery, a motorcycle repair shop, a restaurant, etc. If the students are still unsure, ask the students to think of something they can sell to an ASGM mine instead (shovels, pick-axe, wheel-barrow, etc.), or perhaps a service they can provide to the ASGM industry (gasoline delivery). When explaining this task to the class, make sure to highlight the following items the students should consider when brainstorming business ideas:

1. Am I knowledgeable about the product/do I know how to perform the services I plan to sell?
2. Do people need the product/service; is it in demand?
3. Is there competition in the area already?
4. Does the business fill in a gap in product supply in the area you live?
5. Does the business introduce a new idea or product to a community?

The above considerations should be used to guide a discussion with the class about what makes a business idea good and what they think they would need to consider in order to have a good business idea. Typically, a good business idea is one that is in demand, has low competition, has a low operating cost, and can solve a common problem. For instance, it probably wouldn’t be a good business idea to start a boat retailer in the middle of a desert, but it may be a good idea to start a business that can drill groundwater wells.

Give each group 5 – 10 minutes to come up with a list of 5 business ideas of things they have some knowledge about; knowledge does not need to be extensive, just a basic awareness. There is a space in the student workbook (Student Materials – Worksheets and Exercises: Module 2 Basic Business Terminology and Company Organization) where they can write these business ideas down so that they can remember them later.
Course Project
Starting Your Business Plan

Have each group share their ideas with the class; as they are listing them, the instructor should write them on the board. Compare the ideas and discuss ones that are common or less common, discuss why less common ones may be good ventures to explore (low supply). Going around the room, assign each group a business idea from their provided list, or allow them to choose an idea if they showed interest in a specific one; have them write it down on their group business plan in the business plan handbook (Student Materials – Business Plan Worksheet). They will assume the role of starting this business for the duration of the course. Have each group think of a company name for their business.

Now that each group has a business idea and a company name in their business plan, they can focus in on some more detailed aspects of the business. Provide the class sufficient time to complete the following:

- **Description of business** – A short 1-2 sentence description of what the business does.
- **Type of industry** – Is the business in the sales, service, repair, manufacturing, or other type of industry?
- **Products and services** (what the business is selling or offering).
- **Potential risks and other businesses already functioning in the sector**; things that may affect business success (e.g. lack of customers/interest).
Exercise 2.2

Business Roles and Organization Table

Different roles within the business have specific tasks and by assigning these tasks to people rather than everyone sharing them, every the business can operate more efficiently and cheaply. People are typically hired or assigned tasks based on what they are good at. In standard businesses you typically have a boss or a manager who gives you direction on tasks to complete. However, unless you are reporting directly to the owner, your manager or boss may also have someone telling him or her what to do. This is where the idea of a business organization table comes into play; it is an easy visual representation of how a business is organized but can also be used to solve problems and reference who you report to.

To introduce the idea of different roles and responsibilities in a business, describe the organization of an ASGM business. Since the students’ course projects are not inclusive of ASGM, this will not give anyone an unfair advantage. Ask the class the different roles required to ensure the ASGM operation is running properly. Write the different roles on the board or table paper. If they need some ideas to get started, use some of the following examples:

- Digging the ore/operating processing areas – who does it? It should primarily be the workers/employees.
- Making sure tunnels are safe? It should primarily be the workers and employees, but also sometimes the manager or supervisors.
- Fixing broken equipment or buying parts? Fixing it may be the employee, as well as buying the parts. But deciding whether to fix it and buy parts or replacing the equipment will be decided by the manager and the owner.
- Paying out wages? It is typically approved by the owner; however, the manager may distribute the pay themselves.

It is also important students understand reporting requirements if something goes wrong. In ASGM these issues may vary, but in most cases an employee will report to the manager who will then report to the owner; rarely do steps get skipped. Knowing your direct boss/manager is important to maintain a chain of command.

Since each person in a company has a different role/responsibility/reporting requirement, you can use this information to illustrate to the class the logical formation of a business organization table. Working together using a blackboard or other large writing surface, create a company organizational table. Students may follow along in their workbooks (Student Materials – Worksheets and Exercises: Module 2, Basic Business Terminology and Company Organization) if they choose, as there is a template for a business organization table there; however, this is not necessary. Maintaining the ASGM example, start by writing three employees at the bottom and build the organizational tree towards the owner at the top by following a series of scenarios:
Scenario 1: During a working day, employee number 2 notices that the electricity generator has broken and cannot be fixed. Who should he report to and how can he get a new one?

- Ask the class what they would do in this scenario; if there is a mix of students (i.e. mix of both employees and ASGM owners) ask them their different opinions and see if they line up with each other.
- Ask the class what are the appropriate steps that are taken in regular work life at their ASGM mines based on student experience in similar situations.
- The consensus from the class should be that the immediate person they would report to would be the manager; place the manager above the three employees on the organizational table and connect them with lines from each employee.

Scenario 2: Once the manager is made aware of the problem, he needs to get money to buy the new generator. Who must he ask for money and to make sure it is okay to buy the new generator?

- Typically, the manager would need to request money from the owner, as it is their job to be aware of how money is spent. So that means the person the manager reports to is the owner.
- Place the owner above the manager on the organizational table.
- Explain this basic flow table to be a company organization table and that it can be used to decide who to talk to in case of problems, purchasing needs, or understanding who is in charge of what.
Course Project Update

Business Table

Once students have a business idea and you have discussed the importance of a business organization table, it is time to start thinking of operational requirements for their business plan project. The first step in this is determining how many employees you will need in order to operate the business efficiently, from both a customer service standpoint and a cost standpoint. Using the course project work groups, have the students form a “company”, and have them assign roles to each person in the group with at least one of the followings:

- Owner;
- Manager; and
- Employee.

If groups have more than 3 people, assign the rest as employees.

Now is a good time to allow the students to come up with an organization table for their own business in their business plan. They already have assigned roles, so now they can build a business table using those roles. The students should be given 10-15 minutes to discuss amongst themselves and use the template in the business plan worksheets to build an organization table for their business. While they are doing this, ask them to also discuss amongst themselves what kinds of roles each person in the business would be responsible for.

Once the students have completed this, have the owner of the company share their organizational table and describe the various roles of each person in their group with the rest of the class.

Stage 2. Company Organization Table
Business Problem Solving

This exercise builds on the important of the business organization table, however, many of the basic concepts have already been covered. It is up to the discretion of the instructor whether to include this exercise in the curriculum depending on time and level of understanding the class has up to this point in the training.

This exercise will use the organization table to relate to common problems in ASGM. Ask the class about different scenarios which may be encountered at work at an ASGM site and ask the class what person in the table is responsible for the task. Some ideas may include:

- Payment distribution;
- Purchasing chemicals, gasoline, diesel, etc.

Ask the class for ideas and other things that owners, managers, and employees may be responsible for in the course of their duties. Have the groups of students think of a scenario to be shared with the rest of the class which would illustrate the entire chain of command within the company table and which would involve all tiers of the organization.
Module 3

Profit, Revenue, and Supply
The terminology and ideas in this module were briefly touched upon in Module 1, but now since business organization, expenses, and management have been discussed we will delve more deeply into the ideas of profit, revenue, losses, and things that may affect business performance. The idea is to keep the concepts simple but relatable to ASGM miners.

This module will utilize concepts of basic math including basic addition and subtraction. If students have shown lower than anticipated numeracy rates to this point, it would be a good time to introduce the idea of using the “fake money” prepared in advance. The use of fake money that looks like local currency will involve handing out designated sums of money to represent revenue and asking the students to take away appropriate sums of money to represent expenses.

### Business Definitions

There are a lot of different business terms involved in running a small business that could be defined here, however due to the short time frame of course delivery, it is most important to cover the essentials. Some basic definitions which are important for any manager or business owner to understand are as follows. These should be described to the class:

**Revenue**

Income from sales of a company. This does not mean this is how much money the company takes home at the end of the day because this does not include paying expenses (next definition).

**Expenses**

All of the costs associated with running the business. This can include wages, buying supplies, buying product, electricity, gasoline, and even disposing of waste.

**Profit**

A financial gain; the difference between total expenses and total revenue. This is the total amount of money the business takes home at the end of the day and is how the owner makes money.
Exercise 3.1

Revenue

Students may initially not understand the differences between revenue and profit, and as such it is best to introduce the idea using examples to illustrate the difference. Present the following scenario (Student Materials-Module 3, Exercise 1): at the end of the day, a grocery store has $50 more cash in the register (adjusted for local currency). Have the students write their answers in the workbook before continuing.

Does this represent the profit or the revenue?

- Answer: Revenue. Since things like expenses, product, and employee wages haven’t been considered at this point, this is only the revenue.
- This may seem like a simple example, however is likely to cause confusion when first introduced. Therefore, it is important to highlight the difference between the two terms before continuing so that everyone in the class understands the difference.

For the above example of a grocery store, ask the class what kinds of things would affect the profit. If the class is unsure, start the conversation using some initial ideas, including:

- Buying product to sell;
- Employee wages;
- Electricity;
- Rent;
- Other business expenses?

Write the responses from the class on the board and discuss which are most common. The goal of this exercise is to get the following expenses common across all businesses: Rent, wages and supply costs. These are all costs which are incurred by almost every business on the planet, and these costs directly affect the company profit. If you can reduce these costs, you can increase your profit without changing your revenue. These examples of expenses will be used in class exercises occurring later throughout this curriculum, so keep them nearby.

Ask the class how a company like the one in the previous example can increase its profit. The two answers we are looking for here are:

- An increase in revenue, which basically means making more sales. This will be dependant on a lot of factors and may be influenced through things like marketing and attracting new customers;
- Reducing costs. This is directly manageable by the business owner and through reducing how much money you spend on costs you can increase your profit.

Remind the class that the total profit is the revenue minus the costs.
Instructor Materials

Exercise 3.2

Profit vs. Revenue

At the end of the business day, a grocery store has $50 in the cash register after starting the day with $0. The store must pay its employee $15, and the total cost of product and supply for items sold that day was $20. Answer the following questions:

1. Does the $50 represent profit or revenue?
2. How much profit did the business make that day?
3. Is this a realistic scenario? Yes or no?

The correct answer we are looking for here is no because many of the common expenses we considered earlier, such as rent or utilities, were not included in this example. Explain to the class that this was just a simple example to illustrate how profit is calculated. The next example will present a more realistic scenario with a more comprehensive list of expenses.

Exercise 3.3

Profit Margins

Present to the class a new scenario with more detailed expenses; a business has $60 total revenue at the end of the business day.

1. Using the previously compiled list, circle the most common expenditures, and select the most likely top 3, and assign proportionate, adjusted for local currency, values as follows:
   - Rent and utilities is $20/day.
   - Wages are $15/day.
   - Supply is $10/day.

2. Have the students calculate the profit the owner makes based on this new information.

3. If the class shows good numeracy, have the class determine what percent profit this represents; if the class is unable to do this step, explain that the previously calculated answer represents a 25% profit. If the numeracy level in the class is low, then feel free to show how to calculate the percent profit and explain the process along the way.

Explain to the class that typically small businesses try to maintain profits equivalent to 25%. So, what does this mean? If a store buys a product from the supplier for $1.00 and has no other expenses, they will typically sell it for $1.25. This profit can be used to re-invest in the business, but also is how the owner of the business pays themselves.
Exercise 3.4
Supply

Supply represents a cost stream for businesses that allow it to operate in the first place. A grocery store requires supply in order to sell (you can’t sell food and drinks you don’t have), a manufacturing business requires supply to build things from (you can’t build a motorcycle without parts).

Present the following scenario to the class: A store buys 80 bags of rice; each bag costs the owner 60 cents to buy.

- **Step 1** - What is the total cost of supply?
- **Step 2** - How much revenue did the business make if the business sold all bags of rice in one day at a price of $1.25 each?

Give the class some time to do the calculations either individually or in their groups.

Now present the changes below -Your business has the following expenses:

- Employee wages: $20/day, Rent: $20/day
- **Step 3** - What are the total operating expenses (including the cost to buy the 80 bags of rice)?
- **Step 4** - How much profit did the business make if the business sold 80 bags of rice?

Have the students complete the question in their workbook if they are able to. If not, work through the problem together on the board and discuss the results once completed. Ask the class if they think the profit is reasonable (i.e. is it close to 25%). Ask the class how the company could potentially increase the profit. Answers might include:

- Find a cheaper supplier
- Find a cheaper rent, or negotiate better rent with the owner
- Others?

Lowering employee wages or reducing number of employees is not always a good strategy for increasing profit, as the employees will potentially find new work if the wages are too low, and if you do not have enough employees you may lose business due to a decline in service quality, or production quantity. Business owners should look at other alternatives to reduce expenses if the business is struggling.
Class Discussion – Costs and Profit in ASGM

This discussion will be a focus group class exercise regarding a cost/profit analysis for an ASGM processing centre. This exercise is time and audience dependant and will be slightly more involved from a numeracy standpoint when compared to preceding exercises. However, this exercise will also provide insight for the instructor regarding the financials of ASGM mines in the area in which they are working. ASGM is unique when compared to traditional businesses in regard to its costs; ask the class what supply is involved in the ASGM industry. Some suggestions to get the conversation started in the class include:

- Chemicals;
- Gasoline;
- Buying ore from miners;
- Buying tailings from processors;

Profit streams from ASGM processing centres are typically not singular and extend beyond just selling gold to the gold buyer. ASGM processing centres may also be able to sell their tailings to cyanide processors as there is typically residual gold in the tailings which can be extracted via cyanidation. Have a discussion with the class at this point to find out how ore, tailings, and money changes hands in the mining community. Draw the process from mining of ore to tailings disposal on the board and show the intermediary process in-between the start and finish of gold extraction. In some cases, the mining community is split into three distinct business units who sell material from one stage to the next: (1) miners extract the ore and sell it to the processors, (2) processors use mercury amalgamation or other techniques to extract some of the gold and sometimes then sell the tailings to cyanide operators, and (3) cyanide operators extract the remaining gold with cyanide and dispose of the tailings. This is only one example; other locations may show that miners mine the ore themselves and rent processing centre time from the owners. Each location is different, hence the need to have a class discussion to determine local business models.

Once you have an understanding of local operations, break down each step based on its expenses and revenue. For instance, if the operations are divided such that the miners sell the ore to processing centres, what are the expenses of the miners (wages, supplies, transportation), how much do they charge for each bag of ore and how much ore is in each bag? Follow this same cost/expense process for each subsequent stage of ore processing, writing the expenses and revenues on the board.

Once you have all the information necessary, show the class how to calculate the profit at each stage of the mining process. This will illustrate how expenses affect profit in the ASGM industry. Ask the class some expenses they could reduce to increase this profit. Some ideas include:

- Reducing fuel usage;
- More efficient transportation of ore;
- Others?
Profit Optimization and Setting Costs

Now that the class has a basic understanding of profit, costs, supply, and forecasting, we can work towards price setting in order to make a profit. This section will allow students to use the knowledge gained and set an appropriate cost for a business to sell an item to reach profit goals.

Exercise 3.5
Profit Optimization

This exercise can be found in the Student Materials – Worksheets and Exercises: Module 3. A store sells 100 bags of rice a day, each bag costs the owner 60 cents to buy.

1. Have the students calculate the total supply costs on a daily basis

2. Once supply costs have been calculated, provide the following information:
   - Employee wages are $20 a day
   - Rent is $20 and includes all utilities
   - Have the class calculate how much to charge for each bag of rice to make 25% profit?

3. Have discussion on possible uses for profit (savings, new equipment fund, etc.)
   - Think of things like a special occasion fund/savings account
   - Owner also has to be paid at some point; the owners pay comes out of the profit

At this point is a good time to explain the importance of tracking costs and expenses as it relates to the above examples, how tracking these will help both employees and owners succeed and maximize profits. Knowing detailed costs and expenses allows business owners to track their spending over a long period of time and examine where they spend the most money and allows them to think of ways to reduce spending in that area. If you can reduce the cost or spending in a specific area, but still charge the same price, you can increase your profit.

Business Failures and Cost Management

Learning about common ways businesses fail is important for a business owner, as understanding how it can happen can help the owner avoid these common mistakes. Preventing business failures starts at the very beginning of the business planning stage during the development of the business plan but maintaining the strategies and continual development of a business and its operations is key to preventing business failure. Understanding business failures is also important as the methods and techniques used to avoid business failures will also help a business maximize profit.
Present the idea of business failure to the class. Ask the class the following questions: What is a business failure? How does it happen? What does it mean?

- A business has failed when it has run out of money and can no longer grow or operate (cannot pay its employees or provide a service anymore).
- When a business fails it must close as it can no longer afford to run its operations. When this happens, employees lose their jobs, and the owner loses money they invested into the business.
- If the owner received financing/loans to operate the business, they still must pay these loans back. This highlights the importance of never borrowing more than you can pay back because if your business fails and you still owe money, how will you pay those loans if you are not making money?

When a business is running out of money to pay its bills and employees it is at risk of failure. Financing a business is typically done through either savings or loans but may also come from investors. When a business starts to notice reserves of money running low they may be able to approach existing lenders and financers to request more money to keep the business running, however this may not always be possible. A business failure means a business no longer has any choices/options left to finance operations. This can happen due to a number of reasons; however, some common ones are:

- Run out of money in your business savings;
- Cannot sell enough product;
- Expenses are too high; or
- Cannot find anyone to loan more money.

Now that students know what a business failure is and what some common causes are, ask the class how they can avoid business failure. Some ideas may be:

- Reducing expenses;
- Ensuring you always have a healthy savings to draw money from in case your business has low sales at different times during the year;
- Always budget for expenses and track all of your expenses and income to make sure you are spending money well; and
- Do not borrow more than you think you can pay back.

The above applies to general businesses, but not specifically to ASGM. Ask them to think of some things in ASGM where they can save money or how they can prevent a business failure in ASGM. If they have trouble thinking of them, ask them to think first about what expenses ASGM has:

- Gasoline, tools, equipment;
- Wages;
- Electricity;
- Taxes and interest on loans;
- Variable gold prices – this is always changing so knowing how much your gold is worth is important to understand as this is the product you are selling; and
- Others?
It is up to the instructor at this point how to proceed. If the class has shown a good understanding of cost reductions and saving money it may be a good idea to ask them to get into their groups to brainstorm one scenario per group on how they could reduce any expense associated with their ASGM work. However, if the class has shown some difficulty then this exercise could be done as a group with the instructor presenting a scenario to the class and asking the students how expenses could be reduced. A scenario to present to the class is as follows, with possible answers from the groups/class to help guide the discussion. This scenario may have to be modified by the instructor to suit the gold processing style and equipment used by the student group:

Scenario

An ASGM processing centre buys its ore from miners and processes it for the gold content. The processing centre is only capable of extracting 30% of the gold in the rock due to inefficiencies in how they process the ore. The tailings have lots of gold left in them which are then sold to a cyanide plant who keep all of the profits from the tailings. The processing centre uses 12 different trommels (ores separation machines) and two very old, inefficient gasoline engines to turn the trommels; six trommels are hooked up to each engine and each engine only uses half its power to turn its six trommels, but one of the engines is very old and breaks a lot which requires paying someone to repair the engine regularly. The processing centre has a loan that it has to pay back and the interest on the loan is 5% per month. How can this processing centre reduce its expenses and save money?

- Reduce inefficiencies; there are currently two engines turning 12 trommels, but they are only operating at half their capacity and one is broken a lot. It may be a good idea to change the system, so the better engine turns all 12 trommels. While this is happening, you will save money on gas for the other engine as well as repair costs. This money saved can be used to increase profit, or to save for a new, more efficient engine to further reduce gasoline costs; this will increase profit over time.

- The processing centre is not extracting a lot of the gold from the rock, and the cyanide plant is getting most of the gold. If the processing centre were able to retrieve more gold they would immediately increase their profits. Typically, gold production is related to how the ore is processed and increasing production would require improving the processing methods. This may require buying new equipment which would cost money up front, but long term would increase profits for the company.

- Always pay back loans on time and in full; this will help you save money on interest payments, but also, sometimes a business will need a loan in order to keep operations going. If you have a history of not paying back your loans, then people will not want to loan you money again. The loan the processing centre has is at a very high interest rate (5%/month) and paying it back sooner will save the company a lot of money. This money can be saved to upgrade the processing centre (new engine, new equipment) which will further increase profit in the future.

- Another thing to consider is that a company should always save a little bit of company profit into a savings account; sometimes large equipment can break, gold yield may be low, or the price of gold may drop. The savings will help an ASGM business cover expenses during hard times and will allow operations to continue until things get better.

- Reiterate to the class that the key to avoid running out of money is to keep expenses lower than revenue; this can be done by record keeping and tracking expenses over time (to be further investigated during the financial accounting section).
Business Savings Account

A business savings account is extremely important to help businesses save for unexpected expenses, or to cover months when revenues are lower, and will help a business avoid business failures. This will help a company cover its bills even if the month overall did not have a profit. If a business uses money from its savings account, it should be sure to replace this money as soon as possible when the business is making profits again. To illustrate the importance of a business savings account, use the following example scenario: An owner of an ASGM mine has $500 saved in a bank account. Total business expenses during 1 month of operation are $1,100. Gold mining that month was not very profitable because the ore quality was very low. The mine was only able to mine and sell $500 of gold that month.

- Was this business successful? Why or why not?
- This is an example of a failed business. Because the revenue was less than the expenses and the company does not have enough in savings to cover all expenses and employee salaries.
- What will happen to this business? Will employees get paid?

Ask the class what things could have been done to avoid this problem. Examples may include:

- Larger savings would have protected this business to cover the extra expenses required that month.
- If possible and available, it may be a good idea for the owner to have asked for a loan for that month to cover the expenses either from friends/family or from a financer, bank, or other lender. This would be made even more likely if the business had a good record keeping system which showed good business performance and profits.
- Tracking costs over time would allow an owner to identify areas where extra money is being spent that doesn’t need to be spent. Anticipating lower revenues and higher costs allows owners to adjust how they operate to accommodate the changes.
- Record keeping (to be discussed later in the training) to better describe all business expenses and anticipate savings required

ASGM businesses are unique when compared to standard businesses like retail and stores. Ask the class why an ASGM business might fail? Some ways to get the conversation started may include:

- Not putting money aside/inability to get a loan to cover unforeseen expenses derived from equipment failures, low gold production, or others.
- Since ore grade is extremely variable, there is a very real possibility that the mining location is depleted of high grade, easily accessible ore. This will increase operating costs to get a similar volume of gold from the area or may make the mine no longer feasible meaning the business would have to close.
- ASGM sometimes occurs in contested areas which may result in conflicts between communities, and sometimes even wars may disrupt operations.
- Increases in costs required to run the mine/processing centre such as electricity or gasoline will affect profit of the business. Sometimes these can make the business no longer feasible.
- A lot of ASGM operations are clandestine and typically working either in a semi-legal or informal capacity. This poses a risk to the businesses in that the government can choose to shut down the operations at their whim, resulting in loss of revenues and work for the community. ASGM communities are faced with this regularly around the world. When this happens the mine/processing centres may move to another location or wait until the government leaves and then restart the operations, however, the income lost will be substantial and will impact families.
Depending on the location of training, there is a reasonable chance the ASGM locality in which the training is being presented has experienced a government shutdown in the past. If this is the case, discuss with the class why these government shutdowns may occur. Predominantly it is due to the fact that the ASGM industry is typically not operating with the correct permits or permissions from the government to run either a mine or a business, and their processing method may be against the national environmental law, especially with regard to processing with mercury. This is where the idea of formalization is most important. By formalizing with the government, the business should be complying with official rules and regulations and they cannot be shut down for not complying with these. This will allow the business to operate in a continuous fashion without fear of shutdown and the associated economic instability associated with a government shutdown. Although the formalization process may cost some money in the short term, it prevents unnecessary shutdowns and maintains continuous operation.

Other Business Expenses and Operations

Other considerations when starting a business have to do with where the business is located, how it operates and general start-up costs. Explain to the class that simply having a business idea and knowing who will work for you is not enough, other things to consider include:

1. Where will the business operate from? Will it require space, and will you be buying or renting the space?

2. Will you need to spend money on initial supplies and equipment (start-up costs)?
   - This will vary by industry. For example, for a grocery store you will need to buy a lot of shelving, coolers, and all of the initial food which will be sold. However, something like a repair shop would require tools and equipment, but typically would not need to buy a lot of things to sell initially.

3. What kinds of risks are there in starting your business in the area? Some examples of risk include:
   - Low demand for the business.
   - Low population so cannot support the business.
   - Good idea so perhaps may have people copy the business idea after you are successful

4. What other competitors are currently present, if any.
   - If there are no competitors, then the prospective business owner needs to ask themselves why this is the case. Perhaps there are no competitors because there is no one interested in purchasing items or services from that type of business (low demand). It may also be because no one else has thought of the business and there is a potential for interest in the community. This could be an indicator of a good business idea.

All of the above needs to be considered when preparing a business plan, as it helps the potential business owner consider potential costs and expenses, as well as things that will affect how much money the business brings in from customers.
Course Project Update

Startup, Competition, and Operating Plan

There are sections in the student business plan workbooks where students can list the potential things that will cost money upon starting the business which relate to the preceding discussion. Each business will have unique start-up costs. Ask the class to think about things that will cost money pertaining to the specific business, as well as whether they should consider renting or buying the location of their business. The students do not need to assign dollar values to these items, but rather just list a few. In addition, have them complete the appropriate sections regarding the potential risks to business success, as well as other competitors who are already operating in the industry in which their business resides. By the end of this business plan update, both “Section 1 – Business Overview” and “Section 2 – Business Operating Plan” should be complete for each group.

Give the students 15-20 minutes to discuss amongst themselves and complete these sections of the work book. At the end of the time, and if the students are comfortable with presenting, have them present these components to the rest of the class for each of their businesses.

Have each group look at Section 2 of the Business Plan template – Operating Plan.

Have the students think about various aspects of the business and fill out the plan as best as possible. For sections that we do not know, the students can make assumptions (e.g. rent or lease property, furniture, etc.). These are just exercises meant to allow the students to think of things that may not be obvious at first glance.

Business Action Plan

Have the students, in their groups, open Section 3 of the business plan (Student Materials – Business Plan Worksheet: Section 3). This exercise is to develop an action plan for starting a new business. This will allow students to think about what is required to start a business, as well as timelines for completing the tasks. This exercise is entirely hypothetical and is only meant to introduce the idea of an action plan and planning for the future.

An action plan is a list of essential activities that need to be accomplished and the dates they need to be accomplished by. Action plans are usually presented sequentially, so from the first action taken to the last. Have the groups work together for 15-20 minutes to determine what would be an ideal action plan for starting their hypothetical businesses from scratch. Have the groups share their plans with other groups at the end of the 20 minutes and have a group discussion regarding the different plans from different industries that are being assessed.
Module 4
Health, Safety, and Environment
Protection of health, safety, and the environment is typically seen as an expense by businesses and can therefore sometimes be ignored in an attempt to minimize costs. However, injuries, environmental damage, and poor employee health will have a negative effect on the earning potential of a business and as such will affect profits. Small changes to health, safety, and environmental protection policies are cheap to implement, but can result in effective profit increases due to better worker performance and community opinions of the business as a whole. The purpose of this module is to introduce the idea of health and safety of employees, why it is important, and how downtime due to injury and unsafe conditions affects profit by increasing costs associated with training and employee efficiency. Better health and safety practices at site can actually increase productivity and therefore profit.

Health, Safety, and Environmental Management – ASGM

The ASGM industry is inherently labour intensive and uses predominantly manual methods for ore extraction and processing. This results in a high risk working environment in which injuries can occur easily and frequently. Besides the obvious statement that we do not want to see people hurt while working and we want to see everyone get home safely, other cost factors are associated with injuries on the job. When employees are hurt, time (and money) is spent aiding the injured employees, treating the injured employees, and finding an alternative worker to replace them during recovery periods. When you hire a new worker, you must train them which costs money. Furthermore, they may not operate at the same efficiency as the injured worker who has more experience, meaning production is lower which also translates into lost revenue. Implementing a full-scale health and safety management program is not feasible at most ASGM locations, however, education on the importance of basic housekeeping, basic health and safety practices surrounding ASGM activities, and the importance of proper communication can help reduce the risk and occurrence of accidents on sites.

Also, to be introduced in this module is the Minamata Convention on Mercury, how it will affect the ASGM industry, and the importance of reducing mercury usage/the issues associated with mercury usage.

Importance of Safety Management

To help the class understand the importance of health and safety in the workplace, initiate a group discussion on why following safe work practices is important for both the employee and the employer. At this point the students will likely focus on not wanting people to get hurt and that when they get hurt they cannot work and thus lose money. However, we also want the students to think about the impacts to the business as a whole since students in the class may be interested in running a business themselves.
Some things to consider and to jump-start the discussion include:

- Everyone wants to go home after work and no one wants to get hurt or see their friends and coworkers get hurt.
- Every employer wants their workers to go home safe.
- Employees don’t get paid when they are hurt and not working and therefore will not be able to support their families. If the injury is severe it may be a serious economic problem for the worker and their family.
- When a worker gets hurt it costs money and time for the company for treatment, downtime, replacement, and training of someone to replace the injured employee.
- When someone gets hurt, it reduces operational efficiency since the company will have to train a new worker to replace them. When a new worker is learning on the job they are at higher risk of hurting themselves, others, and may damage equipment due to unfamiliarity with processes.

Everyone and everything is affected by an injured worker on the job, not just the injured person themselves. From this frame of reference, it is easy to see why a business would want to make sure that health and safety procedures are maintained at the workplace and that workers are safe. From a business standpoint, safety management is an important factor that investors and banks who may want to loan the company money might inquire about. A good health and safety program and record keeping program will ensure a company is viewed favourably by investors due to the lower risk of injured workers, reduced downtime, and therefore increased profit and likelihood the business will succeed. From a lender perspective this may mean that the lender will get their money back and make a profit from the loan. Businesses which do not have good working conditions will have higher liabilities in terms of expenses and employee retention, and thus, are higher risk investments for money lenders and will be looked at less favourably.
Exercise 4.1
Hazard Identification

The following exercise will be an informal discussion with the class to help them understand the process of identifying hazards with some being obvious and others less so. There are two methods that the trainer can use to illustrate the hazard identification process. The first is to capitalize on a break period when the students are outside and have them walk around outside to identify at least three safety hazards they see around the training site. Once they come back from break they can share with their group. If the location does not permit this activity or the weather is poor, use a picture of an ASGM site visited by the instructor and discuss all identifiable hazards in the picture. If the instructor has not been to an artisanal mining location before then the photo included in Student Materials – Worksheets and Exercises: Module 4 may be used. Write the safety hazards identified by the students down on the blackboard/pad of paper leaving room for comments under each item. The main health and safety hazards that can be identified in the picture included in this curriculum include:

- Tripping hazards around the equipment and falling hazards near the tailings ponds and at the edge of the concrete pads.

- Moving machinery and engines represent pinch points and crushing hazards for the workers. The biggest risks here are to the hands, but also if loose clothing gets caught in the moving machinery it can pull a person towards the moving components which can seriously injure someone.

- The processing facility has a low ceiling height, and workers may hit their heads.

- The processing centre uses chemicals and lots of water which is contaminated with dirt, silt, and potentially mercury. The processing itself causes splashing of this water, and if it gets into a worker's eyes it can seriously damage their eyesight.

- There is general refuse and debris scattered around the site which represents a tripping hazard and may lead to injuries.

- Sharp tools or equipment represent cutting hazards, and when not properly marked, may result in lacerations.

- Dust and breathing hazards are presented due to the movement of ore. This will cause damage to the lungs and can present serious long-term health problems when extended exposure occurs.

- Loud noises can damage hearing, and the processing centre is a very noisy work environment.
Small Business Management in ASGM
We have purposely left out mercury health hazards at this juncture to avoid confusing the students and want to focus on the hazards that would still exist with mercury-free equipment for now. All of the preceding examples can be managed using simple and easy to implement health and safety protocols; mercury presents its own unique health hazards that cannot be addressed via simple health and safety measures.

Once all hazards have been identified ask the class about ways to prevent people from getting injured and write them underneath each of the hazards. Some examples include:

* Marking tripping hazards or low ceilings with red, high visibility paint so that they are easier for workers to see and identify.
* Removing sharp edges, keeping tools out of main work areas when not in use and teaching workers to always be careful when using tools such as knives which have sharp edges.
* Clean up garbage and debris so that tripping hazards are removed. This includes ensuring that tools and equipment that may pose tripping hazards are removed when not in use and placed somewhere that people will not be able to trip on them.
* Wear hearing protection, gloves, and goggles to prevent damage due to the loud work environment, damage due to moving equipment, and to prevent water and fluids from entering the eyes of the worker.
* Wear dust masks to protect the lungs from inhaled rock particles.

The above examples are all things that can be implemented from an operational standpoint, however, the easiest way to avoid accidents at work is to provide proper health and safety training. By training workers on risk identification and avoidance, they can minimize the risks greatly on their own accord. Use this opportunity to train the workers on how to reduce risk on their own accord. Share the following basic worker health and safety advice:

* Slow down when walking and watching where your feet are going when walking to avoid tripping.
* Pay attention to what you are doing when working around equipment and machinery to avoid hurting your hands or self on the equipment.
* Always be aware of your surroundings and other workers.
* Practice good housekeeping, which includes cleaning up tools and garbage after you use them right away and not waiting until later.
* Wear appropriate safety equipment when working around hazards, such as gloves when handling hot or sharp objects, goggles when handling chemicals, and ear protection when working around loud machines.

By following the above safety procedures, many risks can be avoided by the workers on their own accord. Mining is an inherently a dangerous job, however, eliminating the obvious risks will make the workplace that much safer.
Site Maintenance/Housekeeping

Housekeeping simply refers to keeping a clean and hazard free work area. Some of these topics have already been discussed and include removing tools when done with them and cleaning up debris, however, it is important to reiterate this concept as it is one of the easiest ways to prevent workplace injuries and costs nothing to implement; all it requires is reinforcing work habits and ideas. To illustrate the importance of good housekeeping, present the following scenario:

One worker left a shovel lying on the ground. Another worker was walking across the site and texting his friend on his cell phone. He tripped over the shovel, fell, and broke his wrist.

1. Ask the students to identify the problems with site maintenance and worker behaviour leading to the accident.
   - The major and easiest one to identify is that the worksite was practicing improper housekeeping protocols – the shovel should not have been left in a walking path/out in the open and the worker who used it last should have put it securely away so that no one could trip on it.
   - The less obvious item that lead to the incident was the fact that the worker was texting his friend and not paying attention to his surroundings. The worker should have been paying attention to where he was walking and watching his foot placement.

2. The next step is to ask the class what can be done in the future to avoid downtime and injuries due to accidents like this. The correct way to address this problem is:
   - Teaching and enforcing proper housekeeping protocols to the workers so that accidents can be prevented through basic working practices.
   - An education program for workers to teach them about the importance of safe work practices, including paying attention to where they are walking and how they are working.
   - From the worker hurting himself, the workplace in this scenario learned a valuable lesson and can now come up with some ideas to prevent this in the future, but the worker in question is still injured and that will have implications. Ask the class what these implications may be. The answers may include:
     - The worker is hurt and may not be able to work until his arm has healed so he will lose wages and not be able to support his family.
     - The worker will need to be replaced, meaning that the new worker will require training and thus will not be as efficient as the injured worker, so the overall productivity and thus gold production will be reduced.
     - Therefore, the company loses money as well as the employee due to the injury; an injury which could have easily been prevented.

Discuss with the group risks they have seen at their work sites and ask what things could be changed to improve worker safety.
Mercury and the Minamata Convention

One of the big health risks faced by workers in the ASGM industry is exposure to mercury on a daily basis. Workers, community members around the mines, and downstream communities are exposed to high levels of mercury if mercury amalgamation and burning without retorts (mercury capture tool) is practiced. Mercury is a powerful neurotoxin that is harmful to people, plants, and animals, but especially to young children and developing fetuses. People exposed to mercury may experience both acute (immediate) and chronic (long term) health effects. Mercury in the ASGM industry is used to amalgamate gold from crushed ore, after which point the amalgam is burned and only gold and trace metals remain. The most common exposure pathway in ASGM is through direct contact with mercury vapours during the burning process, as well as following the burning process as the mercury vapours can continue to contaminate the area for years to follow. Time constraints in this training program will not allow for a complete description of methods used to eliminate mercury in the ASGM industry, including improved processing methods; however, it is important to mention that reducing the use of mercury is essential in attracting investors to ASGM projects due to national and international regulations controlling mercury usage.

The Minamata Convention is an intergovernmental agreement to reduce anthropogenic emissions of mercury worldwide in order to protect human health and the overall environment from the damaging effects of mercury. The convention includes measures which limit the supply and trade of mercury worldwide, as well as controls regarding the use of mercury in industry and manufacturing and has specific goals and measures which pertain to ASGM. Although the use of mercury by ASGM is not banned in the treaty, countries do have to take steps to reduce or eliminate the use of mercury in ASGM over time.

Ultimately the Minamata Convention may have an effect on the availability of mercury, and as such the costs of purchasing mercury may increase. If an increase in mercury costs occur, then the cost to process gold using mercury amalgamation will therefore increase, thereby decreasing profits of ASGM mines which use this method, and thus, may impact the profitability and viability of ASGM businesses practicing amalgamation. Therefore, it is in the best interest of owners and operators of ASGM facilities to start looking at alternative processing methods which do not rely on mercury to extract gold from the ore. It is much easier to save extra profits now while mercury is cheap and available than when mercury is more expensive, and profits are reduced, therefore it will be harder to save and purchase new equipment that does not rely on mercury. This will allow the businesses to adapt to the changing market slowly and incrementally, which is much easier for a business to do than if it is forced to do so by government regulation or a sudden lack of supply of mercury.

The predominant health and environmental concerns associated with mercury are:

- Toxic vapours which are invisible and odourless. These vapours exist not only when burning, but when mercury is used in its liquid form and evaporates. Working around mercury at any point results in exposure to these vapours, and thus, workers will breathe these vapours into their lungs.
- Mercury contamination of surfaces is a persistent source of exposure. Mercury will form bonds with metallic surfaces in the working area which are not visible and will release mercury vapour over time, so even if mercury use in gold processing is stopped, all equipment and surfaces in the area where mercury was used will remain sources of potential exposure for extended periods of time.
- Mercury vapours represent an immediate health risk to workers and the ASGM community, however, these vapours are released into the atmosphere and pose a risk of being carried by wind and affecting communities elsewhere where it is deposited.
- The effects of mercury exposure are permanent, and symptoms of excessive mercury exposure do not go away with time.
- Women and children, and women who are pregnant, are especially susceptible to mercury exposure and its effects.
Exposure to mercury has serious implications to various organs in the body, and can cause sickness, disease, and even death. The organs most affected by mercury poisoning include:

- Brain
- Kidneys
- Digestive system

**Mercury as a business cost**

The Minamata Convention aims to restrict mercury trade and use worldwide. This may result in a decrease in the overall supply of mercury and could result in an increase in the cost of mercury in the near future. Mercury is also a long-term cost in that chronic exposure can have a debilitating effect on miners and their families and reduce the number of working years that people exposed to mercury have, and thus reduce potential future income sources and the ability of those impacted to support their families. This is an important concept to illustrate to the class as there is an obvious impact to them directly if they are working with this method.

**Mercury Use and Exposure**

In this section we will discuss with the class different ways they may be exposed to mercury vapours in using different processing methods. Ask the class about their gold processing methods to find out; we are looking for a start to finish description of the various stages in the processing. In order to guide the future discussion, try to summarize each important step of the mining process on the board using one or two words in a bulleted list or by drawing the steps as described. Once you understand how the mining and processing occurs at the location, the next step will be to discuss each stage in the processing chain and ask how mercury is used in each step; is it added, burned, removed, or handled in any way? We will then ask the students how exposure happens at each of these stages, but first the students must understand how they are exposed to mercury. The primary routes of mercury exposure are:

- **Skin** – Mercury will stick to the skin even if you cannot see it. Although absorption of mercury through the skin is a low risk, if workers eat or drink with their hands then they are at risk of mercury exposure through ingestion. In addition, if workers have mercury on their hands and they touch their eyes, face, or nose, then they may be exposed to mercury through absorption through mucous membranes.

- **Ingestion** – As mentioned workers are at risk of ingestion primarily due to transfer of mercury from hands to their food or drink, however, if food or drinks are in the working area then they are at risk of ingestion of mercury which may have contaminated the food directly. Ingestion may also occur if while working some water enters a worker’s mouth and they swallow it.

- **Vapours** – Mercury evaporates at room temperature and as such will release vapours even when it is sitting in a jar. These vapours are breathed into the lungs of workers and community members and enter the bloodstream through the lungs.

Once you have explained the different exposure pathways, work through each step of the gold mining and processing sequence with the class and discuss different exposure pathways and activities which expose them to mercury. Essentially at any step where mercury is used workers are at risk of exposure. Discuss with the class how this can happen. The responses here will be predominantly through physically handling, burning, and working near those burning mercury.
Next discuss ways that risk can be mitigated when working with mercury at each step, including:

- Mercury masks
- Gloves and coveralls
- Handwashing before eating
- Face shields and safety glasses
- Using retorts or vapour capture tools

As mentioned previously to the class, an important way to increase productivity and reduce expenses is to make small changes to environmental and health policies. These can reduce the frequency of injury, downtime, and training costs. Reiterate the importance of health, safety, and environmental awareness to the class. There are many zero cost and low-cost solutions to reduce exposure to mercury and mercury vapours which will have positive impacts on the health of the workers and reduce environmental degradation due to mercury releases. Explain some of these ideas to the class which include:

- Burning amalgams in open areas well away and downwind from residences. At no point should mercury burning occur in residences, stores, or shops within the community. Burning indoors results in immediate exposure to mercury vapour, but also long-term exposure due to extended release from the surfaces of the house exposed to the vapour (residual contamination).
- Burning activities should be performed in a designated area specifically for burning only and no other activities should occur in these areas. Food and drink should not be stored or consumed in this area as the food and drink will be contaminated with mercury. Children and women should ideally be kept out of these areas.
- Equipment used during the burning process (pans, retorts, chimneys, etc.) should not be stored inside, and should be stored in a locked container when not in use well away from residences. This includes clothing worn during a burn as the mercury can stick to the clothing and when workers return home it will expose their family to the mercury.
- During burning activities, workers should do their best to stay away from an active burn so as to avoid exposure to mercury vapours. This is particularly true for women of childbearing age and children.
- Those conducting a burn should position themselves upwind from the amalgam so that the natural air currents will carry the mercury vapours away from the workers.
- Store unused mercury in a locked, safe place.

If workers and managers want to be more proactive about their health, there are some health and safety measures to prevent injuries related to mercury use that can be immediately implemented with minimal costs by:

- Wearing rubber gloves when handling mercury and remembering to always wash hands with soap and clean water after working with or around mercury, especially before eating or leaving work for the day.
- Wear a proper mask when burning mercury. The mask is special for use with mercury; not just a dust mask. These may not always be readily purchased in mining areas though.
- Wear goggles when using mercury to prevent splashing into your eyes.
Environmental Management

A large potential cost from ASGM for both mine operators as well as for the community at large is environmental impacts. Improper management of the environment will reduce potential investment opportunities. Examples of environmental impacts from ASGM include:

- Water contamination from tailings runoff, improper use of chemicals, and mercury contamination.
- Air pollution from mercury contamination and production of dust, as well as inefficient fossil fuel engines.
- Noise from the processing equipment.
- Deforestation to access mining locations, surface deposits, and build roads.

Again, there is not time to explore each of these issues individually in this business training program, however, they should be mentioned as investors will consider the cost of environmental clean-up when looking at where to invest their money. Any of these above environmental “costs” may affect business income and thus reduce profits from the company. Write the above environmental management issues on the board and discuss them with the class.

In reality, all human activities have an environmental impact and they cannot always be avoided. The goal of managing environmental issues should be to completely eliminate the cause of the environmental issues, however if that is not possible, then management of the sources of pollution is the next best option. The reason why management of environmental issues is important for businesses as well as ASGM are:

1. Minimizing impacts is important to minimizing financial risk.
   - Eventually, someone has to pay to clean up impacts. Typically, this is the company who caused them.
   - It is easier (cheaper) to prevent environmental impacts than it is to clean them up. For example, if there is an oil spill, it is easier to immediately clean up the small area than wait several days or weeks until the oil has spread further away.

2. Sometimes it is better to spend money on prevention than waiting until forced to do something

3. Investors/financiers look for environmental plans to minimize their investment risk. By having an environmental plan, it will allow you to borrow more money to buy better equipment which will increase your gold production and therefore increase profits.

4. Miners can use this money to buy mercury free processing systems which will eliminate the need for mercury in gold processing, and will also increase how much gold they can get from each bag of ore.
Environmental Management and Community Perception

How the surrounding community views a business impacts the revenue generated by that business. If a business is a frequent polluter of a town's water supply, for example, the members of that community are going to be less inclined to spend money at that business and will likely look for alternative businesses offering the same service who do not pollute. To illustrate this, present the following scenario:

Scenario

There are two motorcycle repair places in your town. One regularly disposes of its gasoline, fluids, and other chemicals into the river from which people collect drinking water. The other disposes of their chemicals properly and never disposes any into the river. If you had to get your motorcycle repaired, which one would you choose?

The scenario in which the motorcycle repair store disposes of its chemicals properly may cost more, but it will attract more business, meaning revenue and therefore profit will increase. A secondary bonus of following environmental laws is that it allows the business to become one step closer to formalization with the government, which, as illustrated previously, is advantageous for work continuity and financing opportunities.

This scenario illustrates immediately the importance of community perception on how well a business does, as students will more than likely choose the one that does not pollute the drinking water supply. This also illustrates the importance of environmental management from a business standpoint in which a business can maintain or gain more business by following environmental laws in an easy to understand scenario.

Course Project Update

Environmental Management

As mentioned previously, most human activities have some form of impact on the environment. In this update of the course project we will ask the students to think about some environmental concerns for their business they are working in the business plan template. Students may have a hard time thinking of environmental issues for some businesses initially as the concerns may not be immediate. If students are having a difficult time ask them to think about things such as garbage disposal and management, wasted product or unsold items, transportation needs, and energy requirements.
Module 5

Securing Funding, Financing, and Investors
The term financing is a “catch-all” term used to describe various means of securing money to help support a business. Typically, investors and banks who provide financing will require repayment of the entire amount financed, as well as an additional amount called a premium, or interest, on the initial loan. The concept of interest will be discussed later in this module.

Financing is an important tool a prospective business owner may choose to consider when starting or running a business. It can help with large expenditures associated with starting a business or can be used to cover unexpected costs incurred while operating a business. It is important to ensure the students understand that it is not just “free” money, and that there is a cost associated with financing in the form of interest; you must pay someone for the ability to borrow their money, and sometimes interest rates can be very high and may not be worth the financing you receive; you must evaluate your options carefully when considering financing and decide whether you really need it or not.

Discuss with the class where sources of financing/initial cash for a small business just starting out can come from. Write the answers on the board or flipchart. This list may include:

- Banks
- Venture capitalists (investors)
- Gold buyers
- Micro-loans/mining co-op
- Friends
- Family
- Personal Savings
- Financing equipment with the supplier directly

**Sources of Money Other Than Income Which Can Help Start/Operate a Business**

Sometimes when a business is new it is necessary to find sources of money with which to run operations. This may include buying equipment, paying for rent or property, paying employees, buying supplies, or paying the electric bill. In most ASGM nations, the access to loans are limited due to the lack of institutions set up to loan money, and because many people work in the informal economy. As a result, financing is severely limited, and it becomes a barrier to starting a business for many. With that in mind, there are still other sources of money outside of conventional lending programs, but that doesn’t mean conventional lending programs are not available; they just require a little bit of extra work and consideration.

- **Bank loans** – From banks, loans are paid back over time in full plus extra money to the bank who loaned you the money, which is their business revenue. Most banks in developing countries have lending options for good business ideas provided the potential borrower shows good business acumen, however, this will require appropriate knowledge and skills in business management and maintaining proper records.

- **Private financing and investors** – There are some organizations or individuals who seek out small business opportunities with the desire to assist in community growth and development. These can include both profit or non-profit organizations. Local non-profit groups can sometimes help to connect you with these organizations or individuals.
• Informal loans – from friends and family, or community lending from a local co-op or business association; this can be a good option if you maintain a good relationship with friends and family. However, it is worth noting that borrowing from friends and family can create conflict and other problems if the money is not paid back in a timely fashion.

• Savings – either personal savings or a savings specifically for the business from money set aside from profit can be used to either start a business or upgrade business operations, or even maintain business operations if there is a downturn in profits.

The important thing for students to consider is that these sources of money may not always be available or may not be available at all in some cases. This can present a serious challenge to those looking to start a business, or those looking to maintain business operations during hard times (low revenue). Saving money for when times are hard is important, but in these cases, a reliance on personal savings is important. Some important things to consider when trying to start a business are:

• Maintain an adequate savings. When you approach investors or loan agencies, they will want to see that you are personally invested in your potential business or have money to fall back on in case the business doesn’t work. They want to make sure that their money is safe and that you are a good investment.

• Only borrow money that you actually need. If you think you need a certain amount to successfully start a business, but have access to double that, only take what you need. The more you borrow, the harder it is to pay back, and the more interest diminishes profit.

• Only borrow money if you actually need it. For the same reasons above, borrowing money you don’t need can be tempting to spend on things that may be luxuries in the business.

Students should also be aware that sometimes you will need to have money set aside in savings when running the business. It is very rare for income streams in businesses to be constant, and they will typically change throughout the year. By having a savings, it allows the business owner to maintain operations and pay employees when income may be lower. Some strategies to help with this are:

• Always anticipate months with losses in income by tracking how much money and sales your company does. This will allow you to set aside a certain amount of profit from each sale into a savings account which you can take money from in harder times. This would eliminate the need for loans from banks and the resulting interest rates.

• Reinvest profits back into business by upgrading equipment to more efficient options. This can help you save money in operating costs, and thereby increase your profits.

• Cashflow/financial accounting record keeping. This can help with both of the above to determine how much you need to save or identify areas where you can reduce expenses to maximize profit from the sales you have.
What Do Investors Want When Lending/Financing?

Banks/investors will not invest in business ventures that are seen as high risk. High risk businesses are those that are liable to fail. Proving that your business venture is not high risk requires appropriate documentation and financial information on the company. If a business does not have any record of financials or previous business, then there is no proof or record of money coming into and out of the business. Other things banks/investors will look for might include:

- Proper business permits and authority to operate.
- Each country and local government will have different laws governing what permits are required in order to operate a business.
- A business plan.
- An outline how your business will operate, and inclusive considerations given to basic costs, pricing, and potential sales/income.
- A list of your assets (property, equipment, etc.).
- A list of any savings, and investments held by the owner of the company that will help the company grow/start.

Other things future investors might want to look at include appropriate record keeping of health and safety plans, pollution control, environmental permits, and other things which prove the business venture is low risk. Investors are interested in making money and will not be willing to invest in a business that is high risk without a significant return on investment.

Ask the class what other things may dissuade investors from considering a certain business investment opportunity. Their answers might include the following:

- Environmental liabilities.
- Workers injuries and lawsuits.
- Lack of formal accounting/tax payments.
- Lack of business license.
- Poor financial performance.
- Bad relationships with surrounding communities.
- Criminal activity or conflict near the mine.

Why would an ASGM business want investors if it is already operating? Ask the class this question and see what they say. Discuss the following reasons with them:

- Increase production capacity or increase yield during ore extraction by purchasing new equipment (ASGM specific).
- Improve working conditions or the equipment on site.
- Improve ore processing methods and therefore increase gold yield.
- Develop a complementary business (e.g.: jewelry making).
Interest

The downside of taking loans from banks and investors is the need to pay back interest. This is how financiers make money; they charge you to borrow their money. Ask the class if they know what interest means and if not, define it as below:

- Interest is the amount of money charged by the lender to allow you to borrow the money.
- It is expressed as a percent of the total amount of money borrowed.

Interest is calculated based on the amount of the money you still owe to the bank. Each time you pay money back to the bank, the interest owed gets smaller.

Exercise 5.1
Interest Calculation

Due to the complexity of calculating interest payments, it is probably best to avoid these examples unless the class shows good acumen for math problems. These examples are not in the student handbook, so if the instructor decides to present them, it will need to be done in front of the class on the board.

Example:
- If the interest rate on a $1,000 loan is 20%, how much money is paid to the lender at the end of one year in addition to the $1,000 borrowed.
- Answer: $200.

However, most interest isn’t calculated on an annual basis; it is usually calculated on a daily basis or monthly. What this means is that if the annual interest rate is 20%, the monthly interest is 1.67% (20% / 12 months). Working through a year of interest payments with the class is a good way to illustrate this. Using the same assumptions as before, with a loan of $1,000 and an annual interest rate of 20%, however this time the interest is calculated monthly.

Month 1

Step 1 – Find out monthly Interest rate

\[
\frac{20\%}{12} = 1.67\%/\text{month} \quad (0.0167 \text{ as fraction}) \\
\text{This is the amount charged on the money that is due to be paid back to the bank}
\]

Step 2 – How much is owed to the bank?

- At the start of the loan (month 1), the total amount owed is $1,000

Step 3 – Calculate the interest owed that month

\[
$1,000 \times \text{monthly interest} \\
$1,000 \times 1.67\% \quad (0.0167 \text{ as fraction}) = $16.70 \text{ interest due this month} \\
\text{If no payments are made, this amount is added to the loaned amount}
\]

Step 4 – Calculate the new amount owing

\[
$1,000 + $16.70 = $1,016.70 \quad \text{– next month’s interest is calculated based on this new amount}
\]
Month 2

If no payments were made this month, the loaned amount from which interest is calculated is the amount owing determined from Step 4 in Month 1 ($1016.70)

**Step 1** – Calculate the interest owed that month
- $1,016.70 × monthly interest
- $1,016.70 × 1.67% (0.0167 as fraction) = $16.97 interest due this month
- More interest than last month
- If no payments are made, this amount is added to the loaned amount

**Step 2** – Calculate the new amount owing
- $1,016.70 + $16.97 = $1,033.68 – next month’s interest is calculated based on this new amount

Using this example, it shows how each month the interest owed is calculated on the total amount of the loan plus any interest that has not been paid. This can cause a debt to grow very rapidly unless payments are made. If no payments are made, how much would you owe the bank at the end of a year for this scenario? Follow the same steps as outlined for month 2 to calculate the total interest for each month from Month 3 through Month 12. The results of this calculation are shown in the table below.

<table>
<thead>
<tr>
<th>Month</th>
<th>Total Monthly Interest Charged</th>
<th>Amount Owed to Bank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$16.67</td>
<td>$1,016.70</td>
</tr>
<tr>
<td>2</td>
<td>$16.94</td>
<td>$1,033.68</td>
</tr>
<tr>
<td>3</td>
<td>$17.23</td>
<td>$1,050.94</td>
</tr>
<tr>
<td>4</td>
<td>$17.51</td>
<td>$1,068.49</td>
</tr>
<tr>
<td>5</td>
<td>$17.81</td>
<td>$1,086.34</td>
</tr>
<tr>
<td>6</td>
<td>$18.10</td>
<td>$1,104.48</td>
</tr>
<tr>
<td>7</td>
<td>$18.40</td>
<td>$1,122.92</td>
</tr>
<tr>
<td>8</td>
<td>$18.71</td>
<td>$1,141.68</td>
</tr>
<tr>
<td>9</td>
<td>$19.02</td>
<td>$1,160.74</td>
</tr>
<tr>
<td>10</td>
<td>$19.34</td>
<td>$1,180.13</td>
</tr>
<tr>
<td>11</td>
<td>$19.66</td>
<td>$1,199.83</td>
</tr>
<tr>
<td>12</td>
<td>$19.99</td>
<td>$1,219.87</td>
</tr>
</tbody>
</table>

Explain to the class that at the end of one year, you would owe almost $220 in interest to the bank on a loan of $1,000. This is more than 20% annual interest because of how the interest is calculated; the amount is always growing. This shows why it is important to pay back loans quickly. When you calculate this number using the monthly interest rate, compare it to the original calculation using the 20% annual interest calculated only once, and it is seen that the interest is actually much higher. An extra $20 may not seem like a lot of money, but $1,000 is a relatively small loan. For larger loans this extra payment gets larger and will have an impact on the profits of a business.

The reverse is true though – If you make regular payments on your loan, the next month’s interest is calculated on the remaining amount left owed to the bank.
Example

If your initial loan is $1,000, and after 1 month you make a $500 payment towards the loan, how much more do you owe to the bank?

Month 1

Step 1 – Same monthly Interest rate; doesn’t change

• \( \frac{20\%}{12} = 1.67\%/\text{month} \) (0.0167 as fraction)

• Remember that at the end of Month 1 using this interest rate, the total amount owed to the bank is $1,016.70

Step 2 – How much is owed to the bank after a $500 payment?

• $1,016.70 – $500 = $516.70

• This new amount is used to calculate Month 2 interest

Month 2

Step 1 – Same monthly Interest rate; doesn’t change

• \( \frac{20\%}{12} = 1.67\%/\text{month} \) (or 0.0167 as fraction)

• New monthly interest is: $516.70 \times 0.0167 = $8.63

• Total owed to bank is $525.33

Step 2 – How much owed to bank after another $500 payment?

• $525.33 – $500 = $25.33

• This new amount is used to calculate Month 3 interest

Month 3

Step 1 – Same monthly Interest rate; doesn’t change

• \( \frac{20\%}{12} = 1.67\%/\text{month} \) (or 0.0167 as fraction)

• New monthly interest is: $25.33 \times 0.0167 = $0.42

• Total owed to bank is $25.77

• To complete payments on this loan, you would still need to pay the bank $25.77

In this scenario, the total interest paid in 3 months is $25.77 on the initial loan of $1,000. Compare this to the over $220 that would be owed if the borrower waited a year to start making payments and it shows how paying back a loan sooner than required can save a lot of money for a business. Again, this example uses a small amount of money, but for larger amounts this can greatly affect profit and effective loan payments work out in a business’s favour over the long term.
Module 6

Basic Budgeting
The budgeting component of this training course, although important, must be kept basic in order to maintain the focus and attention of the students who may not be used to making detailed calculations. The key to successful teaching of basic budgeting skills is to build up a budget from scratch and to have the students be involved in thinking of items that need to be considered when running a business. In this section the class will work together on building a personal budget. Each student will build a budget for their own family using relative numbers (rather than dollar figures); this is done to avoid socially uncomfortable situations caused by different income and spending power levels amongst the students. The budgeting worksheet in the student workbook (Student Materials – Worksheets and Exercises: Module 6) will be used for this. Each student should get a copy of the worksheet to work with, despite working in groups.

Following development of individual budgets, groups for the course project will get together to build a budget for their respective businesses. Relative numbers are provided in the business plan workbooks based on the type of business the students are working on.

What is a Budget?

A budget is an estimate of income and expenditures of a business or person/family unit over time. Budgets allow you to see how much money you will have coming in or going out at any given point in time and allow people to plan for the future.

Ask the class why it might be useful for a business to have a budget. Some ideas to start the conversation may include:

- Make sure you can cover all business expenses with the money the business makes.
- Make sure you can pay employees, rent, buy new equipment, etc.
- Make sure you can save money to cover any future unexpected expenses.
- Make sure you maximize profit so that everyone involved in the business can benefit from the business operation.

Businesses use budgets, but so do families. Why might it be important for a family to have a budget?

- Make sure you have enough money to pay housing costs, food costs, schooling costs and utility costs for the month based on how much money you expect to earn.
- Save money left over after all expenses are counted for future use.

It is good at this point to emphasize the importance of including in both business and family budgets a budget item for saving money. Having a healthy savings is important for both businesses and families so that they can cover special expenses in the future which may not fit into their normal budget. This idea will be illustrated in the budget preparation examples for both the individual budget and for the business budget.
Exercise 6.1  
Family/Personal Expenses

In this exercise, each student will prepare a budget from scratch for a fictional family. Do not ask the class to use their real family expenses in order to avoid sharing potentially sensitive information. If there are students who have difficulty reading and writing, have other students in their group help them with their budget. In this example, we will slowly build the budget from scratch by introducing different expenses and income streams piece by piece, as well as introducing various unexpected expenses to show the importance of saving money. The worksheet for this budget is available in Student Materials – Worksheets and Exercises: Module 6 and should be provided to each student as part of their course package.

Before we get started on the budget it is a good idea to gauge where students typically spend their money at home. Ask the class about common things they spend their money on, write the answers on the board. Some items to get the conversation started may include:

- Food
- Lodging
- Car/motorcycle
- Gasoline
- Insurance
- Electricity
- Water
- Loan repayment
- Entertainment going out/snacks/drinks
- Clothes
- School fees

The purpose of asking this question is not to use it in the construction of each student’s budget, but rather to get them thinking about how they spend their money at home. It will not be used immediately in the class but perhaps will help the students if they decide to build their own budgets at home later on.

Preparation of Personal Budget - Expenses

For simplicity sake and to avoid disclosing personal finances we will assign simple numerical values to each of the above items that will be used by all students when preparing their personal example budgets. This will also help keep the exercise simple for lower-literacy students. The expenses should be presented on a monthly basis. Present two prices; one for an individual and one for a family. For the family assume a family of four. With the students, review the below table as a guideline for cost ratios for a family relative to individual; adjust the cost to relate to local currency conventions. Although some things may be purchased more regularly such as food or gas, to keep the exercise simple we will maintain a monthly cost. This table is presented in the student workbook as Module 6 – Table 1

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost for Individual</th>
<th>Cost for Married Couple</th>
<th>Cost for Family</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Lodging</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Gasoline/Transport</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Electricity</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Loan Repayment</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Entertainment</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

If students have discussed expenses that do not appear in the above table, assign a cost that seems logical and fits in with the above model.
Have the students make a list of their own personal expenses in the assigned worksheet using the above guide to determine the expenses for their specific living situations; that is, if they have a family in real life, use the numbers in the family column as above. For now, explain to the students that the items in the above table are recurring expenses and explain that the purpose of a budget is to make sure you have enough money to pay for these recurring expenses with the income you make. The goal is to make the budgets useful to those preparing them, so have them be as unique as possible and as representative of the individual as possible.

Once students have individual monthly budgets, have them calculate the monthly expenses and savings in the appropriate column on the same worksheet. Help those who require it, or have other students help each other.

### Exercise 6.2

**Preparation of Personal Budget – Income**

Now that students have come up with a list of expenses we can move towards discussing sources of income. The obvious answer is income from work, however some people, in particular ASGM practitioners, may have multiple sources of income; discuss these potential income sources with the class. Ask the class where additional income may come from in their lives. These may include:

- Selling items at the local market.
- Selling services, such as carpentry and repair, to friends and family.
- Income from spouses.
- Seasonal employment

Avoid discussing exact dollar/local currency amounts to avoid alienating students. Have the students add income to their personal budgets. Use the below table of monthly incomes as a guide when doing this portion. These are also shown in the student workbook in Module 6 – Table 1.

<table>
<thead>
<tr>
<th>Item</th>
<th>Individual</th>
<th>Married Couple</th>
<th>Family</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Income - Work</td>
<td>15</td>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>

Students should use the income in the table above which best suits their living situation at home. Students can write these incomes in the appropriate line in Module 6 -Table 2. Once incomes have been added to the budget the students can now calculate net cash flow at the base of the worksheet to see how much money they have left over every month. The calculation is simply:

\[
\text{Net Cash Flow} = \text{Total Monthly Income} - \text{Total Monthly Expenses}
\]

These numbers represent extra spending money or savings that they can put aside for additional expenses. The resulting total income, total expenses, and net savings will be used in Module 6 – Table 3.
Exercise 6.3
Preparation of Budget Tracking Worksheet

Tracking a budget over time is an important way to make adjustments to your spending habits/expenses or plan for additional income/revenue as required. This exercise is important at home, but also in a business as it allows a business to track expenses month by month, and to identify months when sales are lower or higher, when production is lower or higher, or other items that affect how much profit a business makes over time. In a family scenario, it allows the family to estimate how much money is appropriate to have in savings, and to plan for the future.

This exercise will use the results from Module 6 – Table 2 for total expenses, total income, and net savings to build the table presented in Module 6 – Table 3. In order to facilitate the budget tracking discussion and ensure each student has enough time to do their calculations, the teacher should ask the class to calculate the numbers for each month only as the teacher ask them to, going one month at a time. This will also allow the teacher to introduce sudden expenses which students will need to accommodate using their budgets. These sudden expenses will illustrate the importance of savings. Use the below table to guide the students through the exercise one month at a time. Include the sudden expenses as listed. The sudden expenses can be adapted based on local experience and conditions, however, the numbers should remain the same as shown. The following timeline shows the story to tell students. Have them work through their budget sheets on a month by month basis and apply the different scenarios as you present them.

Month 1 through 2 – January to February
All is normal; no unexpected expenses this month; have the students fill in the cash flow and net savings column.

Month 3 – March
Halfway through March, the students’ motorcycle (single person/couple without children) or car (family) breaks down. The cost is 5 for single person/couple or 9 for a family. Ask the students to add a new expense to their expense column to repair the motorcycle.

Month 3 through Month 6 – April through June
No unexpected expenses this month. Discuss the growth of savings and ways that we can use the money. Introduce the idea that maybe the house needs a new bed or other furniture? Tell the students that since they have reasonable savings in their budget by now, they have a choice to replace their bed or not; allow them to make the decision by assessing their savings and ask them how much they would like to take out of their savings to do so. Present them with two options for a bed – used or new. The cost of a new bed is 10. A used bed is 7. Let the student decide whether they want to buy new, used, or save the money and keep the old bed. Enter this as an expense if they decide to purchase a new bed and adjust total savings as necessary.

Month 7 through Month 8 – July through August
No extra expenses; savings should grow. Calculate new savings as necessary.

Month 9 through Month 12 – September through December
Your housing payments have increased by 1 for each scenario; can you still afford to live there while saving money for a rainy day? How will this affect your monthly savings contributions? Calculate the new monthly savings contributions accordingly.
In November the motorcycle/car breaks down again; this time it is a bigger repair will take away 8 from their current savings to repair if you are single or in a couple without children, and 15 if you are a family. Compare the results from different budgets of those who decided to buy a bed in June versus those who don’t; is there anyone who cannot afford to repair their motorcycle (designing it with local currency in mind, everyone should be able to afford it, but those who bought a new bed should be left with only a small savings after)?

<table>
<thead>
<tr>
<th>Sudden Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
</tr>
<tr>
<td>February</td>
</tr>
<tr>
<td>March</td>
</tr>
<tr>
<td>April</td>
</tr>
<tr>
<td>May</td>
</tr>
<tr>
<td>June</td>
</tr>
<tr>
<td>July</td>
</tr>
<tr>
<td>August</td>
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<tr>
<td>September</td>
</tr>
<tr>
<td>October</td>
</tr>
<tr>
<td>November</td>
</tr>
<tr>
<td>December</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>January</td>
</tr>
<tr>
<td>February</td>
</tr>
<tr>
<td>March</td>
</tr>
<tr>
<td>April</td>
</tr>
<tr>
<td>May</td>
</tr>
<tr>
<td>June</td>
</tr>
<tr>
<td>July</td>
</tr>
<tr>
<td>August</td>
</tr>
<tr>
<td>September</td>
</tr>
<tr>
<td>October</td>
</tr>
<tr>
<td>November</td>
</tr>
<tr>
<td>December</td>
</tr>
</tbody>
</table>

Discuss the results of the exercise with the class. At the end of the simulated year how much has the student saved? What can they do with this money? Save it or spend it to upgrade something in their lives? What are the benefits of either scenario? Should they ever spend it all? Highlight the importance of always having some money in savings to account for unexpected expenses when possible.

After the exercise, discuss how people can save more money in their budgets and areas where they can reduce costs. Make it a group discussion and share ideas.
**Budgeting and Running a Business**

**Small Business Budget**

At this stage we will start building a budget for a small business; the resulting budget will be used in the course project and will be done in groups. We will consider basic business expenses and income streams at the start, but by the end we will incorporate an element of expense forecasting and selection of suppliers based on estimates of sales. The worksheets for this section are provided in *Student Materials – Worksheets and Exercises: Module 6*.

Ask the students why they think a budget is important for a business.

- To forecast future expenses
- To ensure all employees and bills paid on time and in full
- To purchase equipment
- To forecast profits

Why is forecasting important in a business? Consider things like:

- Having appropriate funds to buy in bulk where possible to save money (example next section)
- Upgrading equipment to ensure productivity is maintained/increased
- Hiring new people when required
- Saving money for slow seasons (to be investigated further in financial accounting section)

Based on the knowledge gained in the previous section on personal budgets, have a class discussion about what kinds of expenses their course project businesses may have on a month to month basis. Some of the students will likely have a re-sale-based business while some will have a manufacturing based, etc. The goal is to have a wide range of ideas and considerations presented so that the rest of the class can learn as much as possible from the discussion. Have the groups work independently for 10 to 15 minutes to come up with a list of things that will cost money every month to keep the business in operation. Tell the students not to assign costs/expenses yet, just simply come up with the list of expenses.

- If they are stuck, ask them to think of things like wages, supplies, gasoline, diesel, replacement parts, taxes, loan repayment. Anything and everything is a good starting point here
- Have a group discussion about the things they came up with and which are the most likely and least likely expenses their businesses would have to pay for regularly

Once the students have thought of some ideas, have each group share some expenses they determined for their groups unique business with the rest of the class so that they may compare different expenses from different industries.
Exercise 6.4

Budgeting and Forecasting in the Supply Chain

This example will show a practical use of budgeting and forecasting while running a business and will illustrate the benefits of buying in bulk using money set aside from profits. Budgeting and forecasting can allow a business to maximize profit by planning ahead for expenses such as these.

Present the following scenario to students and write on the board the information: there are two suppliers of rice. Supplier 1 sells each bag of rice at a price of $0.60/bag and does not require a minimum order to be placed. Supplier 2 sells each bag of rice at a price of $0.50/bag, but a minimum order of 100 bags must be placed for each order. Your store sells a total of 7 bags of rice a day, and you sell each bag of rice for $1.00. This information is summarized in Student Materials – Worksheets and Exercises: Module 6 – Table 4, shown as follows.

<table>
<thead>
<tr>
<th>Cost/bag</th>
<th>Minimum order</th>
<th>Sell Price/bag</th>
<th>Sales/day</th>
<th>Sales/Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier 1</td>
<td>0.60</td>
<td>1</td>
<td>1.00</td>
<td>7</td>
</tr>
<tr>
<td>Supplier 2</td>
<td>0.45</td>
<td>100</td>
<td>1.00</td>
<td>7</td>
</tr>
</tbody>
</table>

Work through the rest of the exercise in the worksheet with the class on the board or flipchart. The numbers can get complicated at times so only do this exercise if the class has shown high levels of numeracy. Students can follow along in their workbooks if they are able to do so by using Module 6 – Table 5.

1. How many bags does the store sell in a week?
   - This number does not change if you consider different suppliers. To calculate, assume that the store is open 7 days a week. The total number of bags is:
     \[
     \text{Number of days} \times \text{number of bags of rice per day} = 49 \text{ bags of rice sold}
     \]

2. How much revenue does the store make per week selling rice?
   - Again, this number does not change since the price per bag of rice is constant regardless of which supplier is selected and revenue does not incorporate expenses. So, the calculation is:
     \[
     (\text{Number of bags in a week}) \times (\text{price per bag}) = 49.00
     \]

3. What is the total expense in one week if we purchase rice from Supplier 1?
   - From this supplier there are no discounts for buying a minimum number of bags of rice, and we simply pay a per bag rate, so the calculation is:
     \[
     (\text{Number of bags sold}) \times (\$0.60 \text{ per bag}) = 29.40
     \]

4. What is the total expense in one week if we purchase rice from Supplier 2?
   - From this supplier there are discounts for buying a minimum number of 100 bags of rice, and the store has decided to buy that minimum number, so the calculation is:
     \[
     (100 \text{ bags bought}) \times (\$0.50 \text{ per bag}) = 50.00
     \]
5. How much profit does the store make per week if they sell rice provided by Supplier 1?
   $49.00 – $29.40 = $19.60 \text{ total profit in one week of sales when using supplier 1}

6. How much profit does the store make per week if they sell rice provided by Supplier 2?
   $49.00 – $50.00 = -$1.00 \text{ (lost money) when using supplier 2}

Based on the above scenario, discuss with the class why we would consider Supplier 2 versus Supplier 1? Why did we not make more money using the cheaper supplier? Lead the conversation to the conclusion that in order to benefit from the cheaper supplier, we would need to look at a longer period of time.

So now we can redo the above analysis for a two-week period.

1. How many bags does the store sell in two weeks?
   * This number does not change if you consider different suppliers. To calculate, assume that the store is open 7 days a week for a total of 14 days. The total number of bags is:
     \[
     \text{(Number of days)} \times (\text{number of bags of rice per day}) = 98 \text{ bags of rice sold in two weeks}
     \]

2. How much revenue does the store make selling rice over two weeks?
   * Again, this number does not change since the price per bag of rice is constant regardless of which supplier is selected and revenue does not incorporate expenses. So, the calculation is:
     \[
     (\text{Number of bags in two weeks}) \times (\text{price per bag}) = \$98.00
     \]

3. What is the total expense in two weeks if we purchase rice from Supplier 1?
   * From this supplier there are no discounts for buying a minimum number of bags of rice, and we simply pay a per bag rate, so the calculation is:
     \[
     (\text{Number of bags sold}) \times (\$0.60 \text{ per bag}) = \$58.80
     \]

4. What is the total expense in one week if we purchase rice from Supplier 2?
   * From this supplier there are discounts for buying a minimum number of 100 bags of rice, and the store has decided to buy that minimum number. This minimum number covers the total number of bags sold in two weeks, so the calculation is:
     \[
     (100 \text{ bags bought}) \times (\$0.50 \text{ per bag}) = \$50.00
     \]

5. How much profit does the store make in two weeks if they sell rice provided by Supplier 1?
   \[
   \$98.00 – \$58.80 = \$39.20 \text{ total profit in two weeks of sales when using supplier 1}
   \]

6. How much profit does the store make in two weeks if they sell rice provided by Supplier 2?
   \[
   \$98.00 – \$50.00 = \$48.00 \text{ when using supplier 2}
   \]
This exercise highlights the importance of tracking a business’s expenses over a long period of time, because if we only look at one week for this business it would seem like a bad idea to purchase items from supplier 2 and we would choose to buy items from supplier 1. But if we track these expenses over a longer period of time, then we actually make more profit by buying items from supplier 2 in larger quantities. The following table summarizes the answers in the format presented in the student workbook in Module 6 – Table 5.

<table>
<thead>
<tr>
<th>Cost/Supply</th>
<th>Week 1</th>
<th>Week 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier 1</td>
<td>29.40</td>
<td>Supplier 1</td>
</tr>
<tr>
<td>Supplier 2</td>
<td>50.00</td>
<td>Supplier 2</td>
</tr>
<tr>
<td>Revenue</td>
<td></td>
<td>Supplier 1</td>
</tr>
<tr>
<td>Supplier 2</td>
<td>49.00</td>
<td>Supplier 2</td>
</tr>
<tr>
<td>Profit</td>
<td></td>
<td>Supplier 1</td>
</tr>
<tr>
<td>Supplier 2</td>
<td>-1.00</td>
<td>Supplier 2</td>
</tr>
</tbody>
</table>

Course Project Update

Group Business Budget

Using the list of expenses each group developed for their business earlier in this module, work with the group to assign monthly expense values associated with each item. This exercise, although included in the course project, should only be attempted with classes that have shown high levels of numeracy, and if there is enough time to do so. If the class will not be able to complete this exercise, try to focus more on helping them build a personal budget for their families, or give them time to build one using their actual expenses and income, and offer to the class to review their budgets confidentially if they need help.

For this exercise, to keep things simple, try and use the same 4 base items as follows, and include one unique item for each group based on their business (up to instructor’s discretion):

- Employee wages
- Building lease
- Building expenses and utilities
- Equipment supply
- Unique expense for each company (e.g. advertising, consumables, vehicle lease, etc.)

The numbers used will be multiples of 10 and independent of currency to keep the training generic for each country; if the instructor feels the need, changes can be made to accommodate local currency and/or to use realistic currency values. The expenses will be based on a monthly basis for simplicity sake. The guidelines for various business types are presented as below; they vary in order to keep projects and discussions unique. This will be dependant on the literacy level of students in the class.
For each of the above expenses, explain why they are different (see below) for various industries. Have the appropriate groups write the expenses in the budget worksheet in Section 4 for the *Business Plan Worksheet*:

i) **Manufacturing** – Higher wages because more people working there to accommodate production lines with special training required to produce the items.

**Sales** – Lowest wages because usually no special training is required and lower number of employees.

**Services** – Highest wages because the people working are specially trained and have lots of experience and do special work.

ii) **Manufacturing** – Highest lease because the manufacturing space is a big building and requires lots of space to complete the work, as well as shipping area to send the product to people.

**Sales** – Medium lease fees because you need a smaller area but these are sometimes in a busier parts of town so you pay a premium to run your store there

**Services** – often requires a small space and it does not need to be in busy part of town, so you have a low lease fee.

iii) **Manufacturing** – Highest utilities because the manufacturing space is a big building and requires lots of electricity to operate the equipment

**Sales** – Medium utility fees because you have to keep the sales area well lit, and sometimes need equipment (eg: fridges) for products.

**Services** – You only have a small office and only have to pay for normal lighting, and perhaps air conditioning.

iv) **Manufacturing** – The supplies are cheaper because you can buy in bulk and they have not been modified; base materials are cheaper than produced materials.

**Sales** – Highest supply fees because some other company has produced what you are selling.

**Services** – Lowest supply fees because you are not selling much product, you are selling a service that your employees are good at (think of something like plumbing, or electrician).

v) **Manufacturing** – A unique expense here could be consumables used during the production process or shipping supplies like crates and packing materials; for illustration purposes have these expenses be the lowest cost of the three.

**Sales** – A unique expense here could be advertising your store and products on billboards, in newspapers, and on radio to convince people to visit your store and buy your products; the advertising expense is variable but for this example have it be the second most expensive.

**Services** – A unique expense here could be a company vehicle or travel expenses, or personal computers; these are likely to be high cost so have the unique expense be the most expensive.
Have the students create a monthly expenses budget in their worksheet. Once they have done this, have them calculate how much money the company needs to make in revenue per month to obtain a 25% profit margin. Have them calculate the total profit per month. The answers for each type of business (manufacturing, sales, and services) are provided in the table below:

<table>
<thead>
<tr>
<th>Item (monthly expense)</th>
<th>Costs for Manufacturing Based Business</th>
<th>Costs for Sales Based Business</th>
<th>Costs for Services Based Business</th>
</tr>
</thead>
<tbody>
<tr>
<td>i) Employee Wages</td>
<td>50</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>ii) Building Lease</td>
<td>50</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>iii) Building Utilities/Expenses</td>
<td>30</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>iv) Supply/Equipment</td>
<td>30</td>
<td>40</td>
<td>10</td>
</tr>
<tr>
<td>v) Unique Expense</td>
<td>20</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Total Monthly Expenses</td>
<td>180</td>
<td>160</td>
<td>140</td>
</tr>
<tr>
<td>Profit Goal</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td>Estimated Monthly Profit</td>
<td>45</td>
<td>40</td>
<td>35</td>
</tr>
<tr>
<td>Required Monthly Revenue to Meet Profit Goal</td>
<td>225</td>
<td>220</td>
<td>215</td>
</tr>
</tbody>
</table>

The results in the above table help guide a business when they are setting prices for their services. By knowing the required revenue to meet profit goals, they can set their prices appropriately. When they determine this information in the business plan stage, they can use the information and compare it to current market prices for similar services to see if their business will be viable before they start the business. If other businesses offering the same services are able to do it more cheaply, it may require the prospective owner to rethink their business plan or strategy to either reduce costs, increase sales or consider a different service or market in which they would like to start a business.

At this point in the course the students will have completed their course project. Reiterate the goals of the business plan, how it is used in both planning an operation of a business, and its importance to investors and lenders.

- A business plan is a tool that is used when starting a new business to help you plan for the future and make sure that your business is well thought out before you attempt to start operations.
- Includes description of your business goals, operations, area of service, and even your company name.
- Help you take an inventory of all of your assets (cash, equipment, sources of financing).
- Help you decide if you need a loan or need to look for investors.
- Will help you think of what tasks are required on a day-to-day basis when operating the business, including how many employees you will need and how to manage those employees.
- It will help you explain your business to others, including potential investors/lenders. If you want to apply for a loan at a bank you typically must have a complete business plan.
- The most important part about a business plan is thinking ahead and considering potential costs and major purchases which will affect cash flow.
Module 7

Basic Financial Accounting
Explain to the class what financial accounting means – tracking all the expenses and income streams of a business over a long period of time. The class has already performed this basic task when we did the example of a family budget. Although simplified, the work performed in the annual application of the family budget was essentially financial accounting. Ask the class if they think accounting for a business is more or less difficult than accounting for a household. Ask the class how expenses and revenues would be different for a business vs. a household.

For business:

- More expenses/cash flow streams;
- Multiple employees to pay;
- Multiple bills to pay;
- Business and property taxes;
- Business licenses;
- Leases;
- Equipment payoffs/loans;
- Business loan repayments; and
- Any others from the class?

Because financial accounting in a business is more complicated, it requires more diligence and attention paid to record keeping and expense tracking than a simple family case would present. However, despite it being difficult, proper accounting and record keeping is important.

- Why is it important to track costs?
  - Get funding from financier as they want businesses to be able to prove income streams so that they know the business will be able pay back loans efficiently and lower their risk of investing in the business.
  - Having a good record of financial information is very important for a business if they are seeking new investors as they will want reassurance that the business is viable and will make a profit.

- Putting money aside for a “rainy day”/low production months and anticipating when these low production/sales months would occur by looking at previous trends.

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**Exercise 7.1 Basic Financial Accounting Worksheet**

This example will use a uniform case for every student in the class. This example will be presented and demonstrated by you on the board, however, each student should follow along on their worksheets in Student Materials – Worksheets and Exercises: Module 7, Exercise 1. If the class has high levels of numeracy, then the instructor may elect to give time to the students to complete each step of the problem on their own before working on it together on the board.

The following information is available for a business that mines gold at an ASGM site:

- Total number of employees: 6
- Total number of managers: 1
- Total weekly gold production: 24 grams (4 grams a day with 6 days worked and 1 day off/week)
- Current price of gold: $40/gram
- Daily employee wage: $11/day
- Daily manager wage: $14/day
- Utilities/expenses: $10/day
- Diesel delivery every Tuesday and Thursday, $80 each delivery
- Pay day weekly (Saturday), no work on Sundays
Tables are provided in the student workbook to complete this example; this table should be prepared by all the students in the class individually if they are able, or in groups following along with the instructors’ direction if unable. Two types of tables will be used; the first will summarize daily cashflow for each day of the week (Monday through Sunday) presented in Table 1 through Table 7 in Module 7, while the other will be repeated for each working day and will track daily cash flow, presented in Table 8 in Module 7. These tables are presented below; the weekly summary is shown completed for illustration purposes. Note the negative value on Saturday; this is a result of paying employees on a weekly basis and daily cash flow not being able to cover such a large expense. Highlight the importance of savings in this instance. A completed daily cost table is presented for each day. No daily tracking sheet is presented for Sunday, as no work occurs on Sundays.

**Table 1, Table 3, and Table 5 in Module 7 - Daily Cost Tracking for Monday, Wednesday, and Friday**

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Monday, Wednesday, Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracking Item</td>
<td>Income</td>
</tr>
<tr>
<td>Employee Wages</td>
<td>0</td>
</tr>
<tr>
<td>Manager Wages</td>
<td>0</td>
</tr>
<tr>
<td>Daily Gold Sales</td>
<td>$40/gram × 4 g = $160</td>
</tr>
<tr>
<td>Diesel Delivery</td>
<td></td>
</tr>
<tr>
<td>Daily Expenses</td>
<td>$10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$160</strong></td>
</tr>
</tbody>
</table>

**Table 2 and Table 4 in Module 7 - Daily Cost Tracking for Tuesday and Thursday**

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Tuesday, Thursday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracking Item</td>
<td>Income</td>
</tr>
<tr>
<td>Employee Wages</td>
<td>0</td>
</tr>
<tr>
<td>Manager Wages</td>
<td>0</td>
</tr>
<tr>
<td>Daily Gold Sales</td>
<td>$40/gram × 4 g = $160</td>
</tr>
<tr>
<td>Diesel Delivery</td>
<td>$80</td>
</tr>
<tr>
<td>Daily Expenses</td>
<td>$10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$160</strong></td>
</tr>
</tbody>
</table>
Table 6 in Module 7 - Daily Cost Tracking for Saturday

<table>
<thead>
<tr>
<th>Tracking Item</th>
<th>Saturday</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Income</td>
<td>Expense</td>
</tr>
<tr>
<td>Employee Wages</td>
<td>$480</td>
<td></td>
</tr>
<tr>
<td>Manager Wages</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Daily Gold Sales</td>
<td>$40/gram \times 4 \text{ g} = $160</td>
<td></td>
</tr>
<tr>
<td>Diesel Delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily Expenses</td>
<td></td>
<td>$10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$160</strong></td>
<td><strong>$490</strong></td>
</tr>
</tbody>
</table>

Show weekly cash flow balances assuming even gold production daily, show balances of cashflow on pay day (at the end of the week) using the worksheet in the Student Materials (Table 8, Module 7).

Table 8 in Module 7 - Completed Weekly Tracking Sheet

<table>
<thead>
<tr>
<th>Day</th>
<th>Revenue</th>
<th>Expenses</th>
<th>Daily Savings</th>
<th>Total Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>$160</td>
<td>$10</td>
<td>$150</td>
<td>$150</td>
</tr>
<tr>
<td>Tuesday</td>
<td>$160</td>
<td>$90</td>
<td>$60</td>
<td>$210</td>
</tr>
<tr>
<td>Wednesday</td>
<td>$160</td>
<td>$10</td>
<td>$150</td>
<td>$360</td>
</tr>
<tr>
<td>Thursday</td>
<td>$160</td>
<td>$90</td>
<td>$60</td>
<td>$430</td>
</tr>
<tr>
<td>Friday</td>
<td>$160</td>
<td>$10</td>
<td>$150</td>
<td>$580</td>
</tr>
<tr>
<td>Saturday</td>
<td>$160</td>
<td>$490</td>
<td>$-330</td>
<td>$250</td>
</tr>
<tr>
<td>Sunday</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$250</td>
</tr>
</tbody>
</table>

Once you have the final profit available at the end of the week, ask the class what they would do with it if they just started the business. Some good ideas may include:

- Pay yourself as the owner – you need to get paid for your efforts and the owners pay typically comes out of the business profits.
- Save money in a business savings account if the business is new and does not have a lot of money to cover emergencies.
- If the business still needs equipment to grow, perhaps buy some new equipment.

Would the spending decision be different if you had a well-established business with adequate savings?

- The owner may decide to take more money for paying themselves.
- Now would be a good time to invest in better equipment so that you can save on expenses or increase production.
- Hire a manager to manage the business if the owner is too busy or wants to start another business.
Exercise 7.2
Financial Accounting Group Exercise

This exercise will continue to build on accounting skills demonstrated in the first exercise, however will investigate how financial accounting can be used to plan for changes in things like sales and production. The classroom groups will complete this exercise together using the tables in their Module 7 - Worksheets and Exercises. The following information is necessary to complete the exercise:

- Employees paid daily at the end of their shift
- Income from gold is calculated daily
- Expenses and utilities are paid weekly
- 1 manager on company payroll
- Total daily gold production is 25 grams
- Current price of gold: $40/gram
- Daily employee wage $11/day
- Daily manager wage: $14/day
- Utilities/expenses $10/day, Diesel delivery every Tuesday/Thursday ($80/each)
- Pay day weekly (Saturday), no work on Sundays
- Initial savings at start of week is $250 (left over from exercise 1)

Gold yields will change, and unforeseen expenses will occur daily during this exercise using the following table as a guideline. This must be incorporated into the financial accounting tables used previously; a new set of tables are provided for the students in the student workbook in table 9 through table 14 in Module 7. The weekly summary is provided in Table 15 in Module 7. The answers to each table are provided below; no daily tracking table is provided for Sunday in the instructor manual as there are no operations or expenses on Sunday. The steps to be followed for each day are as follows:

1. Calculate daily employee wages
2. Calculate total income from sales/services on a daily basis
3. Calculate daily revenue for days 1 through 7.
4. Calculate daily expenses (wages) for days 1-7
5. Calculate daily profit for days 1-7
6. Calculate expenses on day 7 (utilities and taxes). Calculate weekly profit on day 7 (sum of daily profit minus day 7 expenses)
The easiest way to approach this problem is to present to the class the changing conditions at the ASGM mine by going through the exercise day by day. For example, tell the class that on Monday the gold yield was 3 grams, and the standard operating costs apply ($10); then ask the class to complete the daily tracking table for Monday to calculate the daily profit and to add it to their business savings. Following this, do this for Tuesday and explain the gold yield for the day as outlined in the table below, and explain that fuel costs have risen to $100; the students should then calculate the daily profits and add it to their business savings. Continue this pattern for the remainder of the week using the below table as a guide to help tell the story to the class.

<table>
<thead>
<tr>
<th>Day</th>
<th>Gold Yield (grams)</th>
<th>Unforeseen expense</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td>3</td>
<td>Increased fuel costs ($100)</td>
</tr>
<tr>
<td>Wednesday</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Thursday</td>
<td>4</td>
<td>Increased fuel costs ($100)</td>
</tr>
<tr>
<td>Friday</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Saturday</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Sunday</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

### Table 9 in Module 7 - Daily Cost Tracking for Monday

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Income</th>
<th>Expense</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee Wages</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Manager Wages</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Daily Gold Sales</td>
<td>$40/gram × 3 g = $120</td>
<td></td>
</tr>
<tr>
<td>Diesel Delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily Expenses</td>
<td></td>
<td>$10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$120</strong></td>
<td><strong>$10</strong></td>
</tr>
</tbody>
</table>
## Table 10 in Module 7 - Daily Cost Tracking for Tuesday

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Tracking Item</th>
<th>Income</th>
<th>Expense</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday</td>
<td>Employee Wages</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manager Wages</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Gold Sales</td>
<td>$40/gram × 3 g = $120</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diesel Delivery</td>
<td></td>
<td>$100</td>
</tr>
<tr>
<td></td>
<td>Daily Expenses</td>
<td></td>
<td>$10</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>$120</strong></td>
<td><strong>$110</strong></td>
</tr>
</tbody>
</table>

## Table 11 in Module 7 - Daily Cost Tracking for Wednesday

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Tracking Item</th>
<th>Income</th>
<th>Expense</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wednesday</td>
<td>Employee Wages</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manager Wages</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Gold Sales</td>
<td>$40/gram × 4 g = $160</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diesel Delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Expenses</td>
<td></td>
<td>$10</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>$160</strong></td>
<td><strong>$10</strong></td>
</tr>
</tbody>
</table>
### Table 12 in Module 7 - Daily Cost Tracking for Thursday

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Tracking Item</th>
<th>Income</th>
<th>Expense</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Employee Wages</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manager Wages</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Gold Sales</td>
<td>$40/gram x 4 g = $160</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diesel Delivery</td>
<td></td>
<td>$100</td>
</tr>
<tr>
<td></td>
<td>Daily Expenses</td>
<td></td>
<td>$10</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>$160</strong></td>
<td><strong>$110</strong></td>
</tr>
</tbody>
</table>

### Table 13 in Module 7 - Daily Cost Tracking for Friday

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Tracking Item</th>
<th>Income</th>
<th>Expense</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Employee Wages</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manager Wages</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Gold Sales</td>
<td>$40/gram x 4 g = $160</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diesel Delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Expenses</td>
<td></td>
<td>$10</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>$160</strong></td>
<td><strong>$10</strong></td>
</tr>
</tbody>
</table>
### Table 14 in Module 7 - Daily Cost Tracking for Saturday

<table>
<thead>
<tr>
<th>Tracking Item</th>
<th>Income</th>
<th>Expense</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee Wages</td>
<td>$396</td>
<td></td>
</tr>
<tr>
<td>Manager Wages</td>
<td>$84</td>
<td></td>
</tr>
<tr>
<td>Daily Gold Sales</td>
<td>$40/gram x 2 g = $80</td>
<td></td>
</tr>
<tr>
<td>Diesel Delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily Expenses</td>
<td></td>
<td>$10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$80</strong></td>
<td><strong>$490</strong></td>
</tr>
</tbody>
</table>

### Table 6 in Module 7 – Completed Accounting Worksheet

<table>
<thead>
<tr>
<th>Day</th>
<th>Revenue</th>
<th>Expenses</th>
<th>Daily Savings</th>
<th>Total Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start of Week</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>$250</td>
</tr>
<tr>
<td>Monday</td>
<td>$120</td>
<td>$10</td>
<td>$110</td>
<td>$360</td>
</tr>
<tr>
<td>Tuesday</td>
<td>$120</td>
<td>$110</td>
<td>$10</td>
<td>$370</td>
</tr>
<tr>
<td>Wednesday</td>
<td>$160</td>
<td>$10</td>
<td>$150</td>
<td>$520</td>
</tr>
<tr>
<td>Thursday</td>
<td>$160</td>
<td>$110</td>
<td>$50</td>
<td>$570</td>
</tr>
<tr>
<td>Friday</td>
<td>$160</td>
<td>$10</td>
<td>$150</td>
<td>$720</td>
</tr>
<tr>
<td>Saturday</td>
<td>$80</td>
<td>$490</td>
<td>-$410</td>
<td>$310</td>
</tr>
<tr>
<td>Sunday</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$310</td>
</tr>
</tbody>
</table>
Closing Remarks and Evaluation

At this point the instructor should spend a few minutes summarizing each section of the course that was covered. The summaries do not need to be detailed and should not last more than a few minutes for each section. It is also important to thank the class for their attention and participation during the course.

Following the summary, provide an opportunity for the class to ask questions – whether they be clarification of specific concepts covered, questions about business ideas, or questions about applying the knowledge and skills developed in this course to aspects of their lives. This should ideally be run as an open forum, and the instructor should encourage everyone to participate in responses.

In addition, it is recommended to ask students about additional business concepts, skills or knowledge that they would like to acquire. This course is only meant to introduce basic, universal business concepts; however students are likely to have a more nuanced understanding of the particular challenges associated with running a business in their locality. This is an opportunity to scope training needs for more advanced or more in-depth development of business skills. Ideas from the class might include things like:

- Mining laws and regulations in their country
- Organizing associations or cooperatives
- Steps for applying for a business licence in their country
- Marketing (gold or otherwise)
- Pitching business ideas to investors
- How to apply for a bank loan
- Basics of microcredit lending
- Lending institutions in their country/region and how to access them.
- Advanced budgeting or accounting
- Mercury-free gold processing business models
- Others.

These ideas can be used, in consultation with local business development organizations, or community level CSOs to develop follow-up training that may be better targeted to the particular business development and management needs of participants.

It is highly recommended to follow-the training with a training evaluation. This not only helps to understand if the intended learning outcomes of the course were achieved, but also helps the instructor to better understand how to adapt course content, structure and delivery for future trainings. Finally, it can help to understand what the ultimate impact of the training may be for students. A sample evaluation form and guidelines for carrying out the course evaluation are included in the section of this curriculum titled Participant Evaluation and in Annex C: Post-training evaluation form.

At the end of the course it is helpful to recognize participation and to credit students for their acquisition of knowledge and skills. This can be done, for instance, through the presentation of certificates of achievement. These certificates are often highly valued by attendees of these kinds of training. Furthermore, they can be used as an asset by students when seeking loans from family or community members and as a demonstration of the knowledge and skills they have acquired in managing successful small businesses. An example of a training certificate is provided in Annex B: Sample training certificate.
Student Materials
## Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revenue</strong></td>
<td>Income from sales of a company; total cash flow into the company from sales</td>
</tr>
<tr>
<td><strong>Capital</strong></td>
<td>Wealth in the form of money or assets owned by a person or organization</td>
</tr>
<tr>
<td><strong>Fixed Costs</strong></td>
<td>Business costs such as rent, that are constant whatever the quantity of goods/services produced</td>
</tr>
<tr>
<td><strong>Variable Costs</strong></td>
<td>A cost a company will incur that varies with the level of output/sales from a business</td>
</tr>
<tr>
<td><strong>Profit</strong></td>
<td>A financial gain; the difference between total expenses/costs and total earnings</td>
</tr>
<tr>
<td><strong>Business Plan</strong></td>
<td>A business plan is a tool that is used when starting a new business to help you plan for the future and make sure that your business is well thought out before you attempt to start operations.</td>
</tr>
</tbody>
</table>
Exercise 1. Please find the solution to the following problems; if you have a calculator, you may use it:

34 + 72 =
21 – 12 =
135 + 73 =
1132 – 79 =
20 × 6 =
\frac{144}{6} =
\frac{200}{20} =

Exercise 2. Please calculate the final cost of two items:

a) Item 1 costs $12, and Item 2 costs $6.50 (adjust for local currency). Each item is charged a 10% tax on the final price of the item. How much tax needs to be paid for each item?

Tax Item 1: 
Tax Item 2: 

b) How much does each item cost after tax (final cost)?

Final Cost Item 1: 
Final Cost Item 2: 
Module 2
Basic Business Terminology and Company Organization

Exercise 1. Business Ideas

Write down 4-5 potential business ideas that you have some understanding of. Your knowledge can be very basic. Share these ideas with the class when requested.

Exercise 2. Business Chart

Each group should create a business organization chart for their hypothetical business plan. Although you are working as a group, each student should fill out their own forms.

Share your groups organizational chart with the rest of the class and present the roles of each student.
**Module 3**  
Profit, Revenue, and Supply

**Exercise 1.**

1. Your business brings in $50 a day in sales (income). Does this represent the profit or the revenue?
   
   **Answer:**

**Exercise 2.**

At the end of the business day, a grocery store has $50 in the cash register after starting the day with $0. The store must pay its employee $15, and the total cost of product and supply for items sold that day was $20. Answer the following questions:

a) Does the $50 represent profit or revenue?

b) How much profit did the business make that day?

c) Is this a realistic scenario? Yes or no?

**Exercise 3.**

1. Your business brings in $60 a day in sales (revenue). If the business has to pay the following expenses every day, how much profit does the business make?
   
   • Rent is $20/day
   • Employee wages are $15/day
   • Supply and expenses are $10/day
   
   **Answer:**

2. What percent profit does this represent? (hint: total profit divided by total revenue)

   **Answer:**

**Exercise 4.**

A store buys 80 bags of rice, each bag costs the owner 60 cents to buy.

1. What is the total cost of supply?

   **Answer:**

2. How much revenue did the business make if the business sold all bags of rice in one day at a price of $1.25 each?

   **Answer:**
3. Your business has the following expenses:
   - Employee wages: $20/day
   - Rent: $20/day

   What are the total operating expenses (including the cost to buy the 80 bags of rice)?
   Answer: 

4. How much profit did the business make if the business sold 80 bags of rice?
   Answer: 

Exercise 5.

A store buys each bag of rice for 60 cents. If your business can sell 100 bags in a day:
   - Calculate daily total supply costs
   Answer: 

The business has the following daily expenses:
   - $20 per day for employee wages.
   - Daily rent is $20.

How much should the business charge for each bag of rice to earn 25% profit?

Step 1: Calculate daily total supply costs.
   Answer: $ 

Step 2: Calculate daily total expenses.
   Answer: $ 

Step 3: Calculate daily total revenue required to earn 25% profit if the store sells 100 bags of rice per day.
   Answer: $ 

Step 4: Calculate total price to charge for each bag of rice.
   Answer: $/bag
Module 4
Health, Safety, and Environment

Exercise 1. Hazard Identification

Look at the photograph on the next page of a small gold processing shed. Identify all hazards in the picture. While identifying hazards, think about how these hazards could be avoided to make sure no one gets hurt/injured while working. When the teacher asks, discuss these hazards with the class.
Module 6
Basic Budgeting

Exercise 1. Family Budget and Planning

Use the below table to complete the budget table in Exercise 1 for yourself or for your family.

Module 6 - Table 1

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost for Individual</th>
<th>Cost for Married Couple</th>
<th>Cost for Family</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Lodging</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Gasoline/Transport</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Electricity</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Loan Repayment</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Entertainment</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income Amount</td>
<td>15</td>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>
## Module 6 - Table 2

<table>
<thead>
<tr>
<th><strong>Expenses</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Expense Item</strong></td>
<td><strong>Monthly Expense</strong></td>
</tr>
<tr>
<td>Food</td>
<td></td>
</tr>
<tr>
<td>Lodging</td>
<td></td>
</tr>
<tr>
<td>Gasoline/Transport</td>
<td></td>
</tr>
<tr>
<td>Electricity</td>
<td></td>
</tr>
<tr>
<td>Loan Repayment</td>
<td></td>
</tr>
<tr>
<td>Entertainment</td>
<td></td>
</tr>
<tr>
<td><strong>Sum of Total Expenses</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Income</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Income Source</strong></td>
<td><strong>Monthly Income</strong></td>
</tr>
<tr>
<td>Work</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
<tr>
<td><strong>Total Income</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Net Savings</strong></td>
<td></td>
</tr>
</tbody>
</table>
Module 6 - Table 3

<table>
<thead>
<tr>
<th></th>
<th>Monthly Income</th>
<th>Monthly Expenses - Regular</th>
<th>Monthly Expenses - Unexpected</th>
<th>Remainder / Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>January</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>February</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>March</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>April</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>May</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>June</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>July</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>August</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>September</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>October</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>November</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>December</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Exercise 2. Cost Forecasting and Supply

Module 6 - Table 4

<table>
<thead>
<tr>
<th>Supplier</th>
<th>Cost/bag</th>
<th>Minimum order</th>
<th>Sell Price/bag</th>
<th>Sales/day</th>
<th>Sales/Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier 1</td>
<td>0.60</td>
<td>1</td>
<td>1.00</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Supplier 2</td>
<td>0.45</td>
<td>100</td>
<td>1.00</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

Module 6 - Table 5

<table>
<thead>
<tr>
<th></th>
<th>Week 1</th>
<th>Week 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost/Supply</td>
<td>Supplier 1</td>
<td>Supplier 1</td>
</tr>
<tr>
<td></td>
<td>Supplier 2</td>
<td>Supplier 2</td>
</tr>
<tr>
<td>Revenue</td>
<td>Supplier 1</td>
<td>Supplier 1</td>
</tr>
<tr>
<td></td>
<td>Supplier 2</td>
<td>Supplier 2</td>
</tr>
<tr>
<td>Profit</td>
<td>Supplier 1</td>
<td>Supplier 1</td>
</tr>
<tr>
<td></td>
<td>Supplier 2</td>
<td>Supplier 2</td>
</tr>
</tbody>
</table>
Module 7
Basic Financial Accounting

Exercise 1. Basic Financial Accounting Worksheet

The following information is available for a business that mines gold at an ASGM site:

- Total number of employees: 6
- Total number of Managers: 1
- Total weekly gold production: 24 grams (4 grams a day)
- Current price of gold: 40/gram
- Daily employee wage: 11/day
- Daily manager wage: 14/day
- Utilities/expense: 10/day
- Diesel delivery every Tuesday and Thursday, $80 each delivery
- Pay day weekly (Saturday), no work on Sundays

<table>
<thead>
<tr>
<th>Number of employees</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of managers</td>
<td>1</td>
</tr>
<tr>
<td>Weekly gold production</td>
<td>24 grams</td>
</tr>
<tr>
<td>Current price of gold</td>
<td>40/gram</td>
</tr>
<tr>
<td>Daily wage per employee</td>
<td>11/day</td>
</tr>
<tr>
<td>Daily wage per manager</td>
<td>14/day</td>
</tr>
<tr>
<td>Weekly utilities/rent</td>
<td>70/week</td>
</tr>
</tbody>
</table>
Please use the above information to complete the following table:

**Module 7 – Table 1**

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Tracking Item</th>
<th>Monday</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Income</td>
<td>Expense</td>
<td></td>
</tr>
<tr>
<td>Employee Wages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manager Wages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily Gold Sales</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diesel Delivery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily Expenses</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Total |

**Module 7 – Table 2**

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Tracking Item</th>
<th>Tuesday</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Income</td>
<td>Expense</td>
<td></td>
</tr>
<tr>
<td>Employee Wages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manager Wages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily Gold Sales</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diesel Delivery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily Expenses</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Total |
### Module 7 – Table 3

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Tracking Item</th>
<th>Wednesday</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Employee Wages</td>
<td>Income</td>
<td>Expense</td>
</tr>
<tr>
<td></td>
<td>Manager Wages</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Gold Sales</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diesel Delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Expenses</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Module 7 – Table 4

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Tracking Item</th>
<th>Thursday</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Employee Wages</td>
<td>Income</td>
<td>Expense</td>
</tr>
<tr>
<td></td>
<td>Manager Wages</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Gold Sales</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diesel Delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Expenses</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Module 7 – Table 5

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Tracking Item</th>
<th>Income</th>
<th>Expense</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Employee Wages</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manager Wages</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Gold Sales</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Diesel Delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Expenses</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Module 7 – Table 6

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Tracking Item</th>
<th>Income</th>
<th>Expense</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Employee Wages</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manager Wages</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Gold Sales</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Diesel Delivery</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Daily Expenses</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Module 7 – Table 7

<table>
<thead>
<tr>
<th>Tracking Item</th>
<th>Sunday</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee Wages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manager Wages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily Gold Sales</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diesel Delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily Expenses</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Module 7 – Table 8

<table>
<thead>
<tr>
<th>Day</th>
<th>Revenue</th>
<th>Expenses</th>
<th>Daily Profit</th>
<th>Total Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td></td>
<td></td>
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<tr>
<td>Wednesday</td>
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<tr>
<td><strong>Total</strong></td>
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</tr>
</tbody>
</table>
Exercise 2. Financial Accounting Group Exercise

This exercise will continue what was demonstrated in the first exercise, however, will investigate how financial accounting can be used to accommodate changes in things like sales and production. The classroom groups will complete this exercise together using the appropriate tables in their student workbooks. The following information is necessary to complete the exercise:

- Employees paid daily at the end of their shift
- Income from gold is calculated daily
- Expenses and utilities are paid weekly
- Total number of employees: 6
- 1 manager on company payroll
- Total daily gold production is 25 grams
- Current price of gold: $40/gram
- Daily employee wage $11/day
- Daily manager wage: $14/day
- Utilities/expenses $10/day, Diesel delivery every Tuesday/Thursday ($80/each)
- Pay day weekly (Saturday), no work on Sundays
- Initial savings at start of week is $250 (left over from exercise 1)

Gold yields will change, and unforeseen expenses will occur daily during this exercise using the following table as a guideline. This must be incorporated into the financial accounting tables used previously (use a new set of tables for this exercise).

<table>
<thead>
<tr>
<th>Day</th>
<th>Gold Yield (grams)</th>
<th>Unforeseen expense</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td>3</td>
<td>Increased fuel costs ($100 for fuel)</td>
</tr>
<tr>
<td>Wednesday</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Thursday</td>
<td>4</td>
<td>Increased fuel costs ($100 for fuel)</td>
</tr>
<tr>
<td>Friday</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Saturday</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Sunday</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
Module 7 – Table 9

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Tracking Item</th>
<th>Monday</th>
<th>Monday</th>
<th>Expense</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employee Wages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manager Wages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Gold Sales</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diesel Delivery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Expenses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
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</tr>
</tbody>
</table>

Module 7 – Table 10

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Tracking Item</th>
<th>Tuesday</th>
<th>Tuesday</th>
<th>Expense</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employee Wages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manager Wages</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Daily Gold Sales</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Diesel Delivery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Expenses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Module 7 – Table 11

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Tracking Item</th>
<th>Wednesday</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Income</td>
<td>Expense</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employee Wages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manager Wages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Gold Sales</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diesel Delivery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Expenses</td>
<td></td>
<td></td>
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</tr>
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</table>

#### Total

### Module 7 – Table 12

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Tracking Item</th>
<th>Thursday</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Income</td>
<td>Expense</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employee Wages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manager Wages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Gold Sales</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diesel Delivery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Expenses</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Total
### Module 7 – Table 13

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Tracking Item</th>
<th>Friday</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Income</td>
<td>Expense</td>
<td></td>
</tr>
<tr>
<td>Employee Wages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manager Wages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily Gold Sales</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diesel Delivery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily Expenses</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Total |  |

### Module 7 – Table 14

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Tracking Item</th>
<th>Saturday</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Income</td>
<td>Expense</td>
<td></td>
</tr>
<tr>
<td>Employee Wages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manager Wages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily Gold Sales</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diesel Delivery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily Expenses</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Total |  |


<table>
<thead>
<tr>
<th>Day</th>
<th>Revenue</th>
<th>Expenses</th>
<th>Daily Profit</th>
<th>Total Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wednesday</td>
<td></td>
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<td>Thursday</td>
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<tr>
<td>Sunday</td>
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</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Business Plan Worksheet

Section 1. Business Overview

Student Name: 

Business Name: 

Description of Business (what does your business do or sell)

Type of Industry (sales, manufacturing, etc.)

Products and Services (what is your business selling)

Risks and Market (other similar businesses present already? Low demand for business?)

Local Competitors (list other similar businesses, what they do well, and what they are missing)
Section 2. Operating Plan

In this section we will describe the location of the business, the numbers, and names of employees as well as their roles in the business, develop an organization chart, and discuss other operational considerations required of your unique business. Some of these items will not be completed in this course, but should be considered in a business plan.

Location of business (city):

________________________________________________________________________

Lease or own property:

________________________________________________________________________

Size/capacity (number of employees it can fit):

________________________________________________________________________

Equipment and furniture:

________________________________________________________________________

Environmental concerns:

________________________________________________________________________

Current employee information:

<table>
<thead>
<tr>
<th>Name of Employee</th>
<th>Title/position</th>
<th>Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
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</tbody>
</table>
Section 3. Action Plan

The action plan is an important part of a business plan and allows you to determine what needs to be done in order to open a new business. This may include things like hiring employees, finding a supplier, finding a property to work from, or even small things like ordering furniture or thinking of a company name. Think of some action items that would be required to start up your business in this business plan.

<table>
<thead>
<tr>
<th>Goal/Action Item</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
Section 4. Financial Plan

Monthly Budget

Use the information presented below to complete the table with the appropriate information.

<table>
<thead>
<tr>
<th>Item (monthly expense)</th>
<th>Costs for Manufacturing Based Business</th>
<th>Costs for Sales Based Business</th>
<th>Costs for Services Based Business</th>
</tr>
</thead>
<tbody>
<tr>
<td>i) Employee Wages</td>
<td>50</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>ii) Building Lease</td>
<td>50</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>iii) Building Utilities/Expenses</td>
<td>30</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>iv) Supply/Equipment</td>
<td>30</td>
<td>40</td>
<td>10</td>
</tr>
<tr>
<td>v) Unique Expense</td>
<td>20</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>Total Monthly Expenses</td>
<td>180</td>
<td>160</td>
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<tr>
<th>Item</th>
<th>Fixed Costs</th>
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<tr>
<td>i) Employee Wages</td>
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<td>ii) Building Lease</td>
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<tr>
<td>iii) Building Utilities/Expenses</td>
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<td>iv) Supply/Equipment</td>
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<td>v) Unique Expense</td>
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<tr>
<td>Total Monthly Expenses</td>
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<tr>
<td>Profit Goals</td>
<td>Eg: 25%</td>
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<tr>
<td>Estimated Monthly Profit</td>
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<tr>
<td>Estimated Monthly Revenue</td>
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Participant Evaluation
Evaluation Goals and Objectives

Evaluation is an important part of any successful curricula. It allows trainers to determine if the curricula is achieving its purpose and to determine what students are actually learning. It also allows trainers to adjust the content or course delivery to better meet the needs of students. In the context of this curricula, evaluation will enable trainers and participants to:

- Quickly evaluate the prior knowledge of participants and identify knowledge gaps before receiving training
- Determine what elements of the training, including content, logistics and delivery worked or did not work for participants
- Determine if the learning outcomes of the curricula were met
- Prioritize follow up-training needs
- Improve curricula design and delivery for future recipients

Evaluation of this training includes a pre-training assessment of participant learning objectives as well as an assessment of basic numeracy and literacy levels. It also includes a post training evaluation which instructors can use to determine the efficacy of the training and level of usefulness to the participants.

Evaluation Tools

Pre-training Assessment

The pre-training assessment should be conducted by the trainer as part of the course delivery. The pre-training assessment is designed to be run in a focus group format. The instructor will ask students why they are attending the business training and if there are any particular skills or knowledge they are hoping to obtain. Responses should be recorded in order to be compared against the post training evaluation results. More detailed guidelines for administering this assessment can be found in the teaching materials (see Training Materials – Module 1: Program Skills Assessment in the general training agenda)

Participants should also be asked to complete a basic numeracy and math skills assessment (see Student Materials – Worksheets and Exercises: Module 1 Worksheet). This assessment is important as basic math skills are an essential core aptitude on which other business skills such as budgeting and accounting are based. Many of the group exercises contained in this curriculum require basic calculations and instructors need to know beforehand whether these exercises will be appropriate given the numeracy and math skills of the participants.

Post-training Assessment

The post-training assessment can either be administered in a focus group format or self-administered using the form in Annex D: Post-training evaluation form.

The format chosen for the post-training assessment should be based on the instructor’s judgement of the overall literacy level of the group. If the group is highly literate, a self-administered evaluation may be appropriate. If the group has low or highly variable literacy levels, the focus group format is encouraged. If the focus group format is chosen, the instructor is encouraged to have an assistant help administer the assessment in order to protect against positive bias due to the instructor’s presence.
## Annex A – Sample Training Attendance Sheet

**Small Business Management in the Artisanal and Small-scale Gold Mining Sector – Day 1 [insert date]**

### ATTENDANCE RECORD

<table>
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<tr>
<th>Name</th>
<th>Signature</th>
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CERTIFICATE OF ACHIEVEMENT

This is to certify that

________________________________________________________________________

has participated in and completed the course

**Small Business Management in the ASGM Sector**

Duration: 2 days                      Dates: [Insert Dates]

organized by

[Insert training organization name]

in [insert location]

________________________________________

[Insert Trainer Name]

ASGM Small Business Management Trainer
Annex C – Post-training Evaluation Form

* The evaluation is designed with potential low literacy of students in mind. It can therefore be self-administered or administered by the instructor or even another participant. The questions asked by the instructor are below. For questions with predetermined options for answers, the instructor should ask the evaluation question and then list all of the potential answers before asking participants to raise their hands to record responses. For free form answers, a focused and moderated class discussion should be held with all responses recorded on the sheet provided below:

Number of evaluation participants: __________

1. Overall, how useful was this course to you?
   a) Very useful __________
   b) Somewhat useful __________
   c) Not very useful __________

2. What was the most useful part of the training?

   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________

3. What was the least useful part of the training?

   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________
4. **This course was meant to teach basic business skills. For you, was the level the course:**
   
a) Too basic __________
b) About right __________
c) Too advanced __________

5. **Do you:**
   
a) Feel comfortable using business terminology you did not know before? __________
b) Have a better understanding of why businesses thrive or fail? __________
c) Consider decisions about health, safety and the environment to be “business” decisions? __________
d) Feel that you will be better able to convince a relative, business associate or a bank to give you a loan after this course? __________
e) Feel that you can make a personal or business budget? __________
f) Think you will be able to track your personal or business income and expenses (accounting)? __________
g) Feel that you could build a basic business plan? __________

6. **Do you think anything will change for you or will you do anything differently after having taken this course?**

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7. How could the course be better organized? (eg: location, length, time of day, awareness of the course, etc.)

________________________________________________________________________

________________________________________________________________________

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8. If you were going to take another course about building successful ASGM businesses, are there any additional topics would you want addressed?

________________________________________________________________________

________________________________________________________________________

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________________________________________________________________________
Certificate of Participation

Hasna Lare
In recognition of participation in the program
Pelatihan Wirausaha Pertambangan Emas Skala Kecil
Semarang, February 3rd 2018