

# Teacher's Guide

Screen-free learning resources that build multiple skills.

## Book 1



# A Note For Teachers

**Education Above All** is a global education foundation based in Qatar that envisions bringing hope and real opportunity through quality education for all. EAA's Innovation Development Directorate developed the **Internet Free Education Resource Bank (IFERB)** to offer hundreds of screen-free, low-resource educational resources that are interactive and develop essential skills in our learners. We are constantly adding to our open-source content, that is available in multiple-languages for multiple-ages, accessible on our website: [www.resources.educationaboveall.org](http://www.resources.educationaboveall.org)

This guide is a collection of 4 projects (1 per week) with several engaging activities from IFERB weaved together as a one month learning experience. Each week, you will facilitate:

## Project

Student-led, hands-on projects through which they learn and apply core academic concepts while also building 21<sup>st</sup> century skills.

## Activity

Engaging activities to supplement their learning from the projects.

## Math Game

Fun and physically engaging games that reinforce math concepts.

## Story Book

Read a story from our story book collection (separate from this guide), along with guiding questions to practice reading comprehension skills.

- The **Project Overview** gives you a description of the project and an outline of the main learning outcomes, materials, and flow for the week.
- Start the project by asking the leading question and getting students excited about the project!
- You can contextualize and add activities to suit different learning needs. Please do not remove any activity. Here are some icons you will come across to help you with this:



These are tips or important points to keep in mind.



These are ideas to make an activity more challenging for students who may find it too easy/ complete earlier.



These are ideas to make an activity simpler

- Project-based learning keeps the learner's voice and choice at the center. They learn as they do the project. So, allow flexibility in how they wish to present their learning.
- Allow time for reflection and discussions. This is an important aspect of their learning.
- Be kind to yourself. Getting used to a non-traditional way of teaching and learning takes time. Once you practice it consistently, it will be easier and exciting for both you and your learner!

# Project 1

# Make ID Cards

<b>Description</b>	The learner will interview and make ID cards for their friends to foster connectedness, learn about differences and similarities, and discover their identity.
<b>Materials Needed</b>	Paper, Pen/Pencil
<b>Learning Outcomes</b>	<p><b>Key Literacy Outcomes:</b></p> <ul style="list-style-type: none"><li>• Identify and use question words.</li><li>• Identify and use adjectives.</li><li>• Develop interview skills.</li><li>• Write an original story with a coherent beginning, middle, and end.</li></ul> <p><b>Key Numeracy Outcomes:</b></p> <ul style="list-style-type: none"><li>• Use tally charts to summarize information</li><li>• Compute and interpret percentages</li></ul>



## Project Overview

1

Discover your identity and the similarities/differences you share with peers.

2

Create a template for your ID Card and a plan interviews to collect information.

3

Develop questioning skills and represent information collected numerically.

4

Write an original short story inspired by the people they interviewed so far.

5

Share their ID Cards, short story, and learnings with their peers.

Discuss the leading question with the learners:

**What can an ID card tell us about the holder?  
How can you represent your identity in an ID card?**

To aid the discussion, show a sample ID Card, if available.

1. Learners will brainstorm the types of uses of ID Cards. Ask the guiding questions:

10 mins

- What are different types of ID Cards?
- Where do you see ID Cards being used?
- What information can you get about a person from their ID Card?
- Do different types of ID Cards have different types of information? Why?

2. Get learners to record their learnings through a mind-map, table, or however they prefer to, for example, a list.



10 mins

3. Explore the following with the learners:

- What does 'identity' mean to you? Is it how you look? Your character? Where you come from? Or more?
- Do you think the ID cards you just discussed capture such information?
- Which details would you want to add or remove from ID Cards you see today? Why?

10 mins

4. Learners will explore their uniqueness and similarities with their partners or in a group:

- What are 5 ways in which they are similar to each other?
- What are 5 differences between them?

10 mins



Encourage children to not only think of physical attributes, but also personality traits. (Do they make friends easily? Are they hot-tempered?, etc.)

10 mins

5. Ask learners to think about the following:

- Do we share more physical similarities with our families than with others? Why do you think so?
- Note down 5 such similarities between you and your parents/siblings. (Eye colour, hair colour, height, etc.)

5 mins

6. Introduce the concept of genes.

- Explain that features and traits are passed down by parents to their children, which is why we share many similarities with our family.
- Some features and traits are less obvious than others, such as being right/left-handed, having attached earlobes, etc.
- Learners can ask all the questions they may have about genes and think about possible answers.



You may not know the answers to all their questions. Encourage learners to guess answers and test this with the evidence they collectively gather.

## Activity

**Learners can do this activity with their family members to explore their genes!**

- Draw a family tree – go as far back as you can! (Learners can do this as homework and come back and discuss their findings.)
- Choose 1 or 2 physical traits to track: eye colour, hair colour, height, nose shape, etc.
- List it down next to each family member.
- Observe how traits are passed down to each generation. Is there a common trait across generations?



7. In this project, learners will make their own ID Cards.

Learners should decide who they want to make ID Cards for.

Learners should think about the purpose of the ID Cards they will be creating (proof of friendship, entry permit to their fantasy world, and more!)

5 mins



Learners can create ID Cards for any purpose! Do not force them to create 'realistic' ID Cards.

*Learners will create an ID Card for themselves and their family members.*

1. Based on the purpose of their ID Cards, learners share with their partners the information they want to include.

5 mins

1. Based on the partner's feedback, they can edit/add/remove categories and put together a template.

(There should be at least 10 categories.)

Example:

Name: _____	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;">           Draw a picture of stick their photo.         </div>
Birthday: _____	
Address: _____	
Phone No.: _____	
Parent's Name: _____	
Eye Colour: _____	
Place of birth: _____	
Languages spoken: _____	
Birthmarks: _____	
Signature: _____	



Challenge students to include details about the person beyond regular information such as their name, age, birthdays, etc.

2. Learners will create an ID Card **for themselves** and present it to their partners. They share what they liked about each other's ID Cards.
3. Learners will work in pairs or groups to explore and make a list of the following:

10 mins

- What are the different ways through which we can collect information from someone? (forms, interviews, etc.)
- What are the advantages and disadvantages of each method?
- To make ID cards for your friends and family members, which method would you choose?

20 mins

Learners present their notes with to their peers.



Ask guiding questions to help learners consider other aspects of collecting information – time, ease of use, people's writing and speaking abilities, etc.

- Learners can collect information through any method based on their choice. However, it is important that they interview at least one person.

Ask the following questions to develop their understanding of the importance of developing interview skills:

5 mins

- Have you ever seen or read about an interview? (TV, newspapers, etc.)
  - What is the purpose of interviews? (jobs, news, police reports, research, etc.)
- Explain to the learners:
    - Interviews usually have 2 people involved – one who asks the questions and the one who responds.
    - Good interviewers are well-prepared and know exactly what information they need from a person. For this, they prepare a list of questions.

5 mins

## Activity

*Learners play a game to revise common question words.*

10 mins

- Learners list common question words together:  
**How, What, Why, When, Where, Who**
- Now, learners stand in a circle and toss a ball to each other. The person who throws the ball should shout out a question word. The person who receives the ball should ask a question using that word.

- Get the learners to look at their ID Card templates and the information needed. They will create a list of questions to ask their friends and family members. Once done, they should share it with their partners for feedback.

10 mins



Remind the learners that it is completely alright to edit or change their template as they get new ideas. In fact, it is encouraged!

- Inform the learners that they should interview at least 2 family members and create ID cards for them at home and bring them for the next class.

*Learners develop questioning skills, create ID cards for their peers, and analyse similarities and differences among them.*

1. Learners share their experience interviewing their family members and present their ID cards:

10 mins

- Did you discover something new about your family member?
- How do you think the interview went? Was there anything you could have done better?

2. Interview responses are one source of information. Get learners to list more sources through which information can be collected about a person. (*certificates, books, photos, audios, etc.*)

10 mins

- When we interact with the person or subject we want to know more about directly, they are the '**primary source**' of information.
- When we get details about them through other people or documents, it is a '**secondary source**' of information.

Get learners to segregate their list as primary or secondary sources.

2. Learners will explore data collection through surveys. Discuss:

5 mins

- If the person you want to know more about writes their answers in a form – is it a primary source or a secondary source of data? (*It is primary.*)
- What if their friend fills out the form for them? (*It is secondary.*)



Do not give away the answers to the students. Probe them to give valid reasons for their responses and challenge them to lead them to the answer.

4. Learners should collect information from their peers for the ID Cards they will be creating for them. They will create their own survey with at least 10 questions. The survey should have different types of questions (next page).

10 mins



**3 Yes/No Questions**

E.g.: Do you enjoy reading books?

**4 Multiple Choice Questions**

What is your favourite colour:  
Black , Blue , Yellow

**3 Open-Ended Questions**

Which language would you like to learn?

5. Learners ask three or more friends to fill out their survey.

10 mins

## Activity

15 mins

- Once learners collect their data, they can analyse the it by tabulating their own and their friends' responses using tally marks. E.g.:

Category	Tally Marks	Total	%
Favourite Colour: Black	III	3	

- Challenge to represent how similar their friends are using percentages:

$$\text{Similarity \%} = \frac{\text{No. of people who have the similarity}}{\text{Total no. of friends}} \times 100$$



If learners struggle to calculate percentages, they can also create pictograms:

Black hair	III	3	
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- Learners can share the similarity percentage with each other and explore why they think the similarities/differences exist?
- Learners conclude the activity by discussing what they found surprising/interesting to learn about each other.

6. Learners can create ID Cards for at least one peer (and are free to do more). The ID Card should include information from the survey too.



This way, learners practise representing information from a verbal source (interview) and a written source (survey).

**Learners will write an original short story inspired by any of the people they interviewed so far.**

1. Discuss the following with the learners:

- Think about the family members and friends you made ID cards for. Who do you find really interesting or inspiring?
- What special qualities of theirs make you feel that way?
- How are you similar to or different from them?

10 mins

## Activity

- Play a quick game where learners and their partners brainstorm a list of adjectives that describe character (E.g.: funny, smart, rude, kind, etc.)
- The team to come up with the most adjectives in 5 minutes wins!
- Learners describe use some of these adjectives to describe the person they were inspired by.

10 mins

2. Learners will write a fictional story based on this person. The main character need not be the person but should be based on them. Explain that stories have a beginning, middle, and end. Guide them through the story writing process:

30 mins

### BEGINNING

Introduce the person. How do they look?  
Where are they? What are they doing?

### MIDDLE

What problem will they face in the story?  
How do they use their special qualities to solve it? Use adjectives!

### END

How does the problem get solved?  
What happens at the end of the story?



*Learners can also write poems, draw comics, etc. for their story. The story can be fictional and the main character need not be the person itself (only based on them).*

3. Learners will write their stories and review it again to check for spelling and punctuation. Then they will exchange it with their partners for feedback:

- What did you like most about the story?
- What can be better?

10 mins

4. Learners will revise the story based on the feedback. Encourage them to narrate the story to the person they wrote about and share their ID Card!

## Day 5

# Make ID Cards

*Learners will present their ID cards, story, poem, and learnings.*

1. Invite learners to play a guessing game with their peers - before giving out their cards out, the learner should share information from the ID Card that would make it hard for people to guess who the card is about!

10 mins



Learners can create their own games using the ID Cards they made!

1. Encourage learners to collect feedback from their peers:

- Did they like their ID Card?
- Do they want to make any changes or decorate it further?

5 mins

3. Invite learners to present their short story/poem to their peers.

10 mins

4. Reflect on the leading question: What can an ID card tell us about the holder? How can you represent your identity in an ID card?

10 mins

Learners discuss with their partners and note down:

- What is your identity, the things you would like others to know about you?
- What would you want to share on your own ID card?

Learners can share their reflection with a peer.

## Math Game

**Learners play a game of Line Up to calculate decimals and arrange them in descending order.**

10 mins

- Learners play in teams of 5.
- Calculate the exact ages of their peers based on their birthdays and write it in decimals. (E.g.: 13 years and 6 months = 13.5 years)
- Team 1 writes the ages of any 5 people on pieces of paper and sticks them to the backs of Team 2 players. Team 2 does the same for Team 1.
- When the time starts, the teams must arrange themselves in descending order (big to small) without talking.
- The team that finishes first and correctly, wins.
- Learners should guess whose age is stuck to their backs!



Learners can also calculate the following:

Who is the oldest and youngest person in class?

What is the average age of class?



Learners can do the activity with whole numbers instead of decimals.

However, introduce them to the concept of decimals if they aren't aware.

## Mindfulness Routine

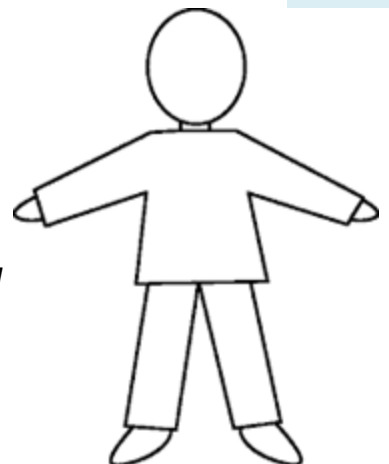
10 mins

- Get the learners to draw an outline of themselves.
- They should fill the drawing with their own good qualities – these can be words or drawings.

### Example:

*If they are very good artist, draw their hands in a special way. If they are very kind, draw a big heart, etc.*

Once done, they share the drawing with their partner.



# Project 2

# Money Matters

<b>Description</b>	The learner will explore the concept of money as a medium of exchange. They will create their own money and learn about demand, supply, consumers, and producers.
<b>Materials Needed</b>	Pen, paper, scissors (optional)
<b>Learning Outcomes</b>	<b>Key Outcomes:</b> <ul style="list-style-type: none"><li>• Explain why money is important and how it evolved</li><li>• Identify the challenges of the barter system.</li><li>• Explain the concepts of demand, supply, consumers, and producers.</li><li>• Create and interpret demand and supply tables.</li><li>• Create budgets and learn how to save money.</li><li>• Calculate the perimeter of rectangles.</li></ul>



## Project Overview

2

Explore commodities as money, create their own currency, and calculate perimeter

4

Understand the relationship between price and supply, create a supply table, and play a math game

1

Discuss the use of money and play a game to understand the limitations of the barter system

3

Set up a shop to understand the relationship between price and demand, and create a demand table

5

Understand the importance of savings and create a weekly budget for themselves

Discuss the leading question with the learners:

10 mins

## Why do we value money?

Ask the following questions to aid the discussion:

- What is money? What does it help us do?
- List some things you can do with money and the people involved.
- Learners can use the table below:

Thing You Can Do With Money	Person Involved 1	Person Involved 2
Buying things	Buyer/customer	Seller/shopkeeper

1. Learners discuss:

10 mins

- From the list, what do you notice about the things you can do with money?
- Observe that there is always an exchange happening.
- We trade money for something else using coin or paper currency or electronic money (with cards).
- If we do not have money, can we use something else to “buy” things?

2. Learners should discuss amongst themselves:

10 mins

- Did people always have money as we know it today?
- Are there other forms of money?
- What did people use, before we had money, to buy or get the things they needed?

Long before people started using money like coins and bills, they exchanged things with each other to get what they need. For example, a shoemaker would exchange shoes with a farmer to get vegetables. This is called **bartering or the barter system**.

## Activity

30 mins

*Learners play a game to understand the functioning and challenges of the barter system.*

- Play in a group of 3 or 4.
- Players must come up with 3 categories of things needed for survival. For example, food, medicine, and clothes.
- Each player must take any 3 or 4 items they have (such as a book, pencil, lunchbox, and bottle) and label it as an article from the above categories. For example, a pencil can be imagined to be a medicine.
- Assign a value of 1 to 5 points to each item based on the importance it holds for survival. 5 being most valuable.
- Stick/write the name of the item and its value on it.
- When the game starts, players will walk up to each other to try and trade the items they have for better ones or for ones they are missing. Try to convince players to give up their item.
- Try and trade with every player in the group.
- After each round, record points in a table like this:

Player	Food	Clothing	Medicine	Others	Total
Player 1	5	0	4	2	11
Player 2	3	4	3	1	11
Player 3	3	3	0	4	10
Player 4	2	4	2	4	12

- The objective is to have the most number of points and items from each category.

3. After the game, ask learners to reflect on the following:

5 mins

- Was it easy to convince others?
- What do you think happened to people who owned too much of 1 item?



Ask learners to imagine they were a fruit seller during the barter era. They can write a short essay on how they ensured that their family's needs were met and what challenges they might have faced.

4. Learners can work in groups to compare money trading and bartering. Help them with questions such as:

10 mins

- What are some things we can do with one that we cannot do with the other?
- What are some difficulties you may face in each type of trading?

For example:

Money	Bartering
We can use it to buy anything	We can only get what we need if someone wants what we have to offer

5. Learners present their comparisons to their peers and share feedback on what they liked.

5 mins

5. Conclude the day by sharing how money allows us to do several things:

- We can store our money for later use, we don't have to use it all up at once since it doesn't spoil like food or other perishable items.
- When trading with items, we cannot break or split the item into parts. But with money, we can choose the amount we wish to spend.
- With money, we need not have troubles with valuing each item to trade. For example, how would one determine how much wheat should be traded for a goat?

5 mins



**Learners create their own currency.**

1. Discuss with learners:

- What form of money do you see today?
- What currency do we use?
- What denominations does our currency have
- Do all countries have the same currency?
- Do all currencies have the same value? For example, is \$ 1 and AFN 1 the same? Why or why not?

**10 mins**

For the last question, encourage learners to ask their family members too. Encourage them to explore. On another day, you can briefly explain that each country's currency holds a value – which can keep changing over time based on the country's economic growth.

2. Learners now create their own currency by following these steps:

- Cut out 30 rectangles (paper bills) and 30 circles (coins).
- Let them choose 6 denominations (AFN 5, 20, 100, etc.) and make 5 bills and coins of each.
- Get learners to observe a money bill. It usually has an important landmark or historical figure on it. Some even have a motivational saying!
- Let them add a picture of a hero or favorite landmark and add an inspiring quote to one of the paper bills and coins.
- They should think of a catchy name for their currency!
- Learners should calculate the total amount of money they have.

**15 mins****Activity****15 mins**

Explain the concept of perimeter (distance around a shape) and discuss with learners how it is useful in real-life. Learners then use a ruler to measure the length and breadth of their bill.

They then calculate the perimeter of the rectangle by adding the measurements up! Challenge them to use the formula:  $2(l + b)$



If learners are familiar with the perimeter of rectangles, challenge them to calculate the area of a rectangle using the formula  $l \times b$ . You can also encourage them to find the circumference of their coins using a thread and then using the formula  $2\pi r$ .

## Math Game

15 mins

Learners play a game of **Speed Shopping** to practice mental math.

- Learners play in a group of 3 to 5 players
- Each player should use their own home-made “money” of different denominations. They must start with the same amount (if not exactly, then approximately)
- Each player becomes the shopkeeper for one round and calls out the price of an imaginary item. They can make it challenging by using decimals as well.
- The customers must call out a larger denomination that they will use to pay for the item and tell the ‘shopkeeper’ how much change they should get back.
- The fastest customer to do it accurately keeps the money. The other customers must actually pay the shopkeeper.
- The customer with the most amount of money at the end of all the rounds wins!



Shopkeeper

The price is ₨85.

Here is ₨100. I have to get back ₨15.



Customer



A shopkeeper can even call out the prices of 2 or more products so that learners must first add the prices and then calculate the change that needs to be given back.

5. Ask learners if there are items that have more value than others that they would be willing to pay for (essential items, e.g., milk, bread, etc). Encourage them to think about why certain items are more valuable and how it affects pricing.
- Tell learners that tomorrow they will set up a shop. They need to choose an event, e.g., school is starting, or Eid is approaching to help them decide what items to sell in their shop.
  - To prepare for tomorrow's event, learners must choose 5 specific items (including essential items) and draw 10 of each item. For example, 10 naan-e-Afghani, 10 cartons of milk, 10 notebooks, 10 pens etc.

5 mins

## Day 3 Money Matters

*Learners set up a shop to understand the concept of demand.*

1. Learners will now set up a shop.
- Learners will be divided into 2 teams, half of them will be sellers and the other half will be customers, then they will switch roles, sellers will become customers and vice versa.
  - Each learner must maintain a '**Demand**' table like this one.

10 mins

### Demand Table

Item	Price	How many people bought it?

**Learners set up a shop to understand the concept of demand and plot a demand curve.**

1. Learners must visit their peers' shops and use their hand-made bills and coins to purchase items.

15 mins

1. Halfway through the activity, announce a sale in which learners must reduce the prices of items in their shop. Ask them to record their customers' purchases at different prices.

15 mins

1. Explain to learners:

- In your market, there were two main players, the buyer and the seller.

A person who buys items to use them is also called a **consumer**.

A person who makes an item to sell is called a **producer**.

5 mins

- When a consumer wants an item and has enough money to buy it, it is called '**demand**'.

4. Learners should then discuss in groups:

15 mins

- What was the demand for items at the original price?
- What about after the sale?
- Is there any relation between demand and price?
- Do consumers want low or high prices? Why?
- Do producers want low or high prices? Why?
- What happens when there is too much supply?
- What would you sell more of in these 2 scenarios – normal times and in times of financial trouble?

Consumers want lower prices, so when prices are lower, demand is higher; when prices are high, demand is lower. Excess supply will cause price to fall, and as price falls producers are willing to supply less of the good, thereby decreasing output.

5. Ask learners to then think of any real-life examples where they get to see this relationship between demand and price.

10 mins

- Share an example with them after they answer.

*(Eg: When clothing stores go on sale, more people go shopping or when given a choice between similar products, people choose the cheaper one.)*

Ask learners to bring one item from their home for a game they will play on Day 4. They should know it's price but should not disclose it to anyone. If they cannot bring it, they can even draw its picture.

## Day 4 Money Matters

**Learners use their shop sales to understand the concept of supply.**

1. Re-iterate that the people who buy items for use are consumers. Those who make the items that are sold are called producers.

5 mins

1. Discuss with learners:

- Imagine you were a producer. Your factory makes shoes priced at 500 Afghani and socks priced at 10 Afghani. Which item would you want to produce more of and why?

10 mins

- Explain the term supply: The amount of an item produced for selling at a given price is called '**supply**'.

4. Learners should look back at their demand table from the previous day and now create a **Supply Table** with the number of units they would want to sell of each item (provided they could only sell a total of 15 units of all products combined).

### Supply Table

15 mins

Item	Price	How many of it I want to sell?
Candy	3	2
Dress	5	5

*Explain that as a shopkeeper, you would want to sell more of the expensive items so you can make more money! Similarly, producers would prefer to supply more when the price of an item is higher because that means they will earn more money.*

7. Discuss with learners and ask them to list their points in their notebook:

- What do you think makes people want an item less or more, that is, what affects demand?
- Think of an example from your own life where you stopped buying an item, or suddenly bought more of an item. What made you do this? Some reasons include change in taste or preference, price change. Can you think of more?
- In contrast, if you decide to start selling an item, for example, sweaters, what are some reasons you might start selling more or less? For example, if it is hot, you will make fewer sweaters. Can you think of other examples/ reasons?
- What happens when the cost of making an item increases?
- What if there are more producers in the market?

15 mins

15 mins

## Activity

***Learners build an understanding of how much things cost in the real world.***

- Each student brings an item (a physical object or a drawing) as instructed in the previous day. Have a back-up of items in case students are unable to or forget to do this.
- The rest of the class should guess what the price of the item is. Students can raise their hands to respond. Collect 3 responses. Ensure different students get a chance to guess.
- The price closest to the actual price of the item wins!

**Learners learn about budgeting to track their expenses, and save more money.**

1. Introduce the topic for the day by explaining that in life, we work and earn money. We then spend money to buy things we need and want. The money left over after we buy the things we need is called **savings** or money saved.

5 mins

1. Discuss with learners:

- Do you think it is important to save some of the money we earn. Why or why not?

5 mins

## Activity

10 mins

- Imagine you have 50 afghani.
- Discuss with learners what items they would buy with this money and why they should prioritise essential items.
- 1 loaf of bread costs 2 Afghani, while a carton of milk costs 5 Afghani.
- How many loafs of bread and cartons of milk can you buy?
- Try out different combinations, till you find one that fits your budget.

*(Draw this table on the board)*

Item	Price	Quantity	Total
Loaf of bread	2	2	$2 \times 2 = 4$
Carton of milk	5	9	$5 \times 9 = 45$
<b>Total</b>			$4 + 45 = 49$

3. Explain that a budget is a plan we make about how much money we should spend on different things and how much we should save based on how much money we have.

5 mins

3. Learners now create a budget for themselves by following these steps:

- List the 10 most important things you use in a week at home.

10 mins

- Give each of these items a price that reflects their real value that you would see in a store (approximately).
- Put it in a table like this one.

Item	Price
Cooking oil	100
Rice	60

- Next, say you have 5,000 afghani. This is your budget or the total amount available to you to spend for the month.
- Add the cost of all the items you gathered or listed
- Subtract the total cost of all the items listed from the budget. Do you have more or less money than the total cost of the items you need?
- Repeat this with a higher budget of 10,000 afghani.
- What difference do you notice? Are you able to save anything or do you want to purchase more items?

*Money saved is the amount that you have left over after you pay for everything that you need. One can save their money in a secure place like with your parents, a money box or in a bank account.*

5. Learners write their observations in their notebook

5 mins

5. Learners should now create their weekly or monthly budget based on their price table. They can decide the amount they want to begin with and use a table like this one to determine how much they want to spend.

Item	Price	Quantity	Total

10 mins



5. Learners present their budget to their peers and give feedback to each other. They make changes to their budget, if needed.

5 mins

5. Learners reflect and discuss with their peers:

5 mins

- What is the most important point you have learnt through this project?
- What are you finding challenging, puzzling or difficult to understand?
- What question would you most like to discuss further?
- What is something you found interesting?

Learners should present their budget to their families and receive their feedback too!

## Mindfulness

10 mins

***Learners practise mindfulness by understanding how they budget their time.***

- One a sheet of paper, learners list all the things that people their age:
  - might enjoy doing in their day, such as reading a book, playing sports, spending time with family, riding a bike, etc..
  - should do in their day, such as keeping their things neatly, eating healthy, exercising, helping their family, sleeping etc.
- The list should have at least 16 things on it and make sure you write them spread across the page rather than one below the other.
- Learners then exchange their sheets with their partner.
- Learners then use the sheet in front of them to select how they would like to budget the 24 hours of their day by:
  - Circle all the things they would want to include in the day and write how many hours they would spend doing each thing.
  - Add any other things they would like to do on the back of the sheet.

## Project 3

# Patterns Everywhere

<p><b>Description</b></p>	<p>Learners will understand how patterns help us make sense of the very complex world and transform information and data into meaning. Learners will visually represent different patterns around them.</p>
<p><b>Materials Needed</b></p>	<p>Paper, colours, paint or something that could leave a colourful trace on paper</p>
<p><b>Learning Outcomes</b></p>	<p><b>Key Outcomes:</b></p> <ul style="list-style-type: none"> <li>• Identify different kinds of patterns on daily life</li> <li>• Exemplify how meaning is connected to patterns</li> <li>• Identify patterns in sequences of numbers, shapes, and letters.</li> </ul>



## Project Overview

2

Identify and create patterns that use sound and shapes.

4

Identify and create mathematical patterns, and learn about the Fibonacci sequence

1

Track patterns in their own behaviour and create a collection of patterns in their environment.

3

Create art using pointillism and understand the concept of abstraction.

5

Identify patterns in their behaviour and make a plan on which patterns to break and which to enhance

Discuss the leading question with the learners:

5 mins

## How can patterns help us understand the world?

Ask the following questions to aid the discussion:

- What do you understand by the word patterns?
- Do you see any patterns you see around you?
- Have you used patterns in any form?

### 1. Share with learners:

5 mins

- Patterns are things, numbers, or shapes that repeat in a logical way.
- Understanding patterns, help us better understand life around us.
- For example, days and nights repeat and happen regularly as a pattern.
- Some animals have patterns on their skin. Draw 3 patterns you see on animals.

Share possible answers such as the feathers of a peacock, stripes on a zebra or tiger, spots on a cheetah, etc.



2. Learners work with their partners and list 4 more patterns they see in nature.

5 mins

Share examples once they are done. Such as seasons, petals of flowers, snowflakes, spider webs, honeycombs, Also, the week has always the same number of days, and we work for some and rest for others.

3. Learners must then observe patterns on clothes/any human-made things around them and draw 3 of these patterns in their notebook.

5 mins

# Activity

15 mins

**Learners observe patterns in their habits and behaviours.**

- Learners must think about their daily actions to observe patterns in them.
- Learners draw this table and track behaviours of their choice for the next two weeks.
- They must put a tick or a cross in the box depending on whether they did showed that behaviour or habit that day.
- When they fill in the table every day, they must think about what they did before or after that action. Whether they had eaten, what they had watched or done, etc.
- Collectively look back at this tracker at the end of the week. And then at the end of two weeks.

Question	Day 1	Day 2	Day 3	Day 4	Day 5
<b>Did I lose my temper today?</b> <b>Think:</b> When did it happen? What happened before and after that?					
<b>Did I have bad dreams?</b> <b>Think:</b> What did I do during the day that day? When did I have my last meal?					
<b>Did I wake up rested today?</b> <b>Think:</b> What time did I go to bed the night before? Did I do anything tiring the day before?					
Any other behaviour the learner wants to track					
Any other behaviour the learner wants to track					

# Activity

15 mins

**Learners create a collection of patterns in their surroundings.**

- Learners must go around their neighbourhood/school/class, think about their life at home and find examples of 8 to 10 patterns. For example, 'How does your family usually spend time during the week?', 'What do the leaves of trees look like?', 'What do the buildings/houses around you look like?', 'How do you feel at home/in class?'
- Learners must spend some time really searching so they are able to find diverse examples with rich and different attributes, a mixture of patterns that are beautiful, surprising, complex, curious, multifaceted, mathematical, and artistic, and that come from many different areas.
- Then, for each of the pattern, learners must provide:
  - a. A brief description of the pattern itself: what are its main features- colours, shape, timing, etc.), where it arises, where did you find it, what does it remind you of, etc.
  - b. A brief description of why they found this pattern compelling enough to include it in their collection.
  - c. A visual image, sample, or rendering of the pattern. For this, they can use pencil, colours, or can also use small stones, beans, sticks, whatever they are able to find.
  - d. A name, one that they think is appropriately descriptive



Remind learners that not all patterns are directly observable. For example, we can immediately see the pattern of a fruit when we cut it open, however, we can only observe day and night over a longer period of time. We cannot see patterns in our feelings and thoughts, but can experience them in different ways. Challenge learners to find such patterns and try to represent them visually.

4. Learners must then present their collection to a peer and comment on each other's work using these prompts:
- **CLARIFY:** Are there ideas that the learner shared that need to be clarified or explained a little more?
  - **CONNECT:** Can you identify a connection with the patterns or the ideas that the learner shared? Explain what that connection is. For example, the pattern might remind you of a place you've been or your experience might be connected to one of the parts of the system that the learner identified.
  - **NEW IDEAS:** Did the learners' analysis of the patterns extend your thinking about patterns or give you a new perspective on something? If so, share how.

## Day 2 **Patterns Everywhere**

*Learners explore patterns in routines, routes and movements, and represent patterns in different ways.*

1. Recap what patterns are and ask learners to share some examples of patterns.

10 mins

1. Learners now use sound to make patterns.

15 mins

- Write the following key on the board.

A

B

C

D

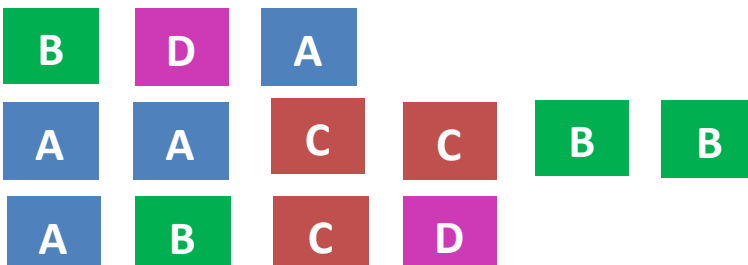
Snap your fingers.

Clap your hands.

Stomp your feet.

Tap your thighs.

- Learners now follow the given sequence to make patterns of sound



2. Learners now create their own code to create similar sound patterns. If possible, learners can take turns in groups and do each other's patterns, or create patterns to challenge others like a contest.

15 mins

3. Learners think of their favourite song and identify the pattern of beats. Challenge them to create a code for the beats too!

10 mins

## Activity

10 mins

*Learners complete and solve patterns using different math rules.*

- Write the following on a board and get learners to complete the pattern:

2 4 4 5 2 4 4 5 \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

K Z L K Z L K Z L \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

S S D A S S D A \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

6 12 18 24 30 36 \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

3 , 12, 48, 192, \_\_\_\_\_ , \_\_\_\_\_

125, 120 , 115, 110 \_\_\_\_\_ , \_\_\_\_\_



- Learners must then create three number patterns of their own using combinations of different rules of math (multiply by 2, subtract by 5, etc. ).
- They can then ask their peers to complete the pattern.

**Learners explore how to use patterns through art.**

1. Show learners a picture of a painting that uses pointillism on the next page. (You can pass the image around in class).

5 mins

Ask them to discuss the following things:

- What do you see?
- What do you notice about the style of the painting?
- How do you identify objects in the painting?

1. Explain that vision involves identifying patterns, like many pixels that form a picture. Pixels are the smallest area of a screen or picture.

5 mins

- When we zoom into a picture, we can see small dots that form the picture. These dots are called pixels.
- Artists use a technique called pointillism, where dots are used in patterns to create an image.

3. Learners must now create their own picture using pointillism. They must:

15 mins

- Draw any picture.
- Decide the colour of each object in advance.
- Use anything with a thin tip (twig, back of a pencil, earbud, etc) or their finger to add colour.
- Ensure that learners are not seeing each other's drawings for the next activity.

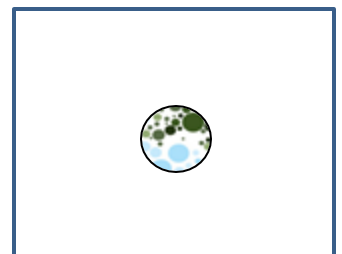


You can make your own colours using spices and other household items (for example, Turmeric powder for yellow).

4. Learners will then do an activity to understand the idea of zooming in and abstraction. Get learners to:

15 mins

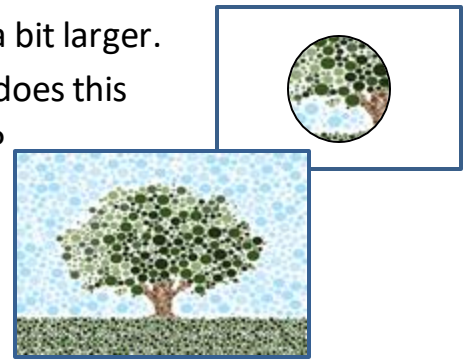
- Make a tiny hole in a sheet of paper and place it on top of their drawing.
- Ask their partner: What do you see or notice?  
What do you think this drawing is based on what you see or notice?







- Use the same sheet of paper, but make the hole a bit larger. Ask: what new things do you see or notice? How does this change your initial idea of what the drawing was?
- Finally, without the paper, ask: What do you see or notice? Was your interpretation of the full drawing accurate?



6. Explain that this process of “zooming out” is called “abstraction” and patterns help us do this.
- An abstraction involves hiding out or ignoring details to form a general theory or picture about something.
  - For example, if someone eats too many sweets everyday, we can zoom out and say that they will face teeth issues over a year.
  - Patterns help us move away from specifics to understand what is repeating and in what way. Without patterns, we would not be able to understand what we see around us!

5 mins

7. Discuss with learners:

- What kind of things do you think we can do with patterns when we understand them this way? (Eg: Weather reporting, sports predictions, economic trends, etc.)
- Think for a few minutes, and write down your ideas.
- Then share them with the class.

5 mins

## Mindfulness

***Learners practise mindfulness by observing patterns in clouds.***

10 mins

- Learners to observe the changes they see in the sky.
- They look up at the sky and draw the different shapes of clouds that they see.
- They can also mention if the cloud shape looks similar to something around them like an animal, person, or object.

**Learners explore mathematical patterns and sequences.**

*Remind learners that patterns also exist in math. They can follow different rules like addition, subtraction, multiplication, division or even a combination of them.*

1. Learners complete the following patterns.

10 mins

1 3 5 7 7 9 11 13 \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

6 12 18 24 30 36 \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

1 4 10 22 46 94 \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

Learners then share the rule they identified to complete the patterns.

2. Learners should then work to create 5 of their own number patterns

15 mins



Encourage learners to use a combination of operation, for example, 'the next number is 3 times the previous minus 1', where the sequence would be '1, 2, 5, 14...'.

3. Share this sequence with learners and ask them to identify the rule being followed and predict the next three numbers in it.

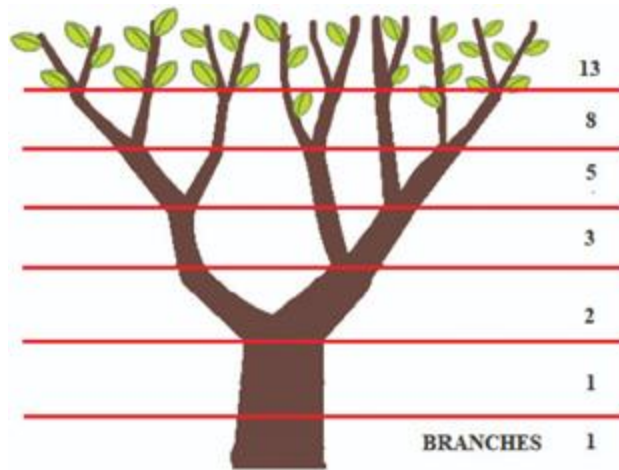
10 mins

0, 1, 1, 2, 3, 5, 8, 13, \_\_\_\_, \_\_\_\_, \_\_\_\_...



Do not give away the answer too easily. Let learners experiment with numbers and try to figure out the rule on their own!

- This sequence is called the Fibonacci Sequence. In this sequence, each number is the sum of the two numbers before it.
- This sequence is found in patterns in nature like the branches of trees.



10 mins

5. Draw/show a similar image.

Learners to work in pairs to see if they can identify the Fibonacci Sequence in the branches of the tree.

The number of petals in a flower also consistently follows the Fibonacci sequence. Famous examples include the lily, which has three petals, buttercups, which have five, the chicory's 21, the daisy's 34, and so on. (show images of these flowers if possible)



1 Petal



3 Petals



5 Petals



8 Petals



13 Petals

7. If possible, learners can go around and try to find flowers, cones, trees, ferns, shells, or objects that follow the Fibonacci sequence.

15 mins

**Learners identify patterns in their behaviour based on their tracker.**

1. Discuss with learners: If you see a sky full of grey clouds, can you predict what will happen next? **10 mins**

- If we know that two things have been happening together in the past, we might be able to predict what will happen in the future. This approach is the foundation of almost every discipline, including architecture, design, math, and science.
- But, most importantly, having an understanding of what might happen in a situation may give you the opportunity to create a different outcome than what you have seen before.

Learners come up with 2 more examples of predictions they can make based on patterns observed.

2. Learners take a look at the behaviours they have been tracking since a week and note down 3 patterns they observe, like this: **10 mins**

**When I \_\_\_\_\_, then \_\_\_\_\_ happens.**

- For example, “When I do not sleep well, then I get angry more easily.” or “When I eat a healthy breakfast, I feel more fresh through the day.”
3. Learners must then reflect on the following in a group:
    - Are there “good” or “bad” patterns? **10 mins**
    - Zoom out. In a month or a year, how do these patterns affect your life?
    - Patterns can be changed. How would you break or enhance some patterns?
  4. Learners should then make a poster to remind themselves of how they would like to break or enhance some patterns in their life. **20 mins**
  4. Learners present their poster to a peer and discuss similarities and differences they observe in their posters. **10 mins**

Description	The learner will set goals and create plans to bring their vision to life.
Materials Needed	Pen, paper, colours, protractor
Learning Outcomes	<p><b>Key Literacy Outcomes:</b></p> <ul style="list-style-type: none"> <li>Identifying character traits with evidence</li> <li>Comparing and contrasting using Venn diagrams</li> <li>Use transition words to sequence, compare and contrast</li> </ul> <p><b>Key Numeracy Outcomes:</b></p> <ul style="list-style-type: none"> <li>Calculating simple probability</li> <li>Practising solving linear equations in one variable</li> </ul> <p><b>Life Skills:</b></p> <ul style="list-style-type: none"> <li>Setting goals and tracking progress</li> </ul>



## Project Overview

2

Create their vision book and create a pie chart to represent their ideal day.

4

Identify habits needed to reach their goals, create habit trackers and calculate the probability of achieving their goals.

1

Describe their heroes and compare and contrast their heroes qualities with their own

3

Set SMART goals and solve goal-related word problems using linear equations in one variable.

5

Plan for challenges, choose quotes that motivate them, and play a math game to calculate probability.

Discuss the leading question with the learners:

10 mins

## How do I set goals for my life and work towards it?

Ask the following questions to aid the discussion:

- What are goals?
- Do you have any goals?
- How can you track if you are progressing towards your goals?
- Who inspires you to reach your goals?

1. Invite learners to think about people who inspire them or who they wish to be like.

10 mins

- They must come up with 4 such heroes, people they look up to (2 women and 2 men), who do different things (homemakers, professionals, etc.).
- They should draw their heroes and write their names.
- For each hero, they must write 3 to 4 character traits they admire about them. For example, creative, compassionate, loyal, honest, humble, disciplined, etc.
- Give an example of a situation where they demonstrated a particular trait.

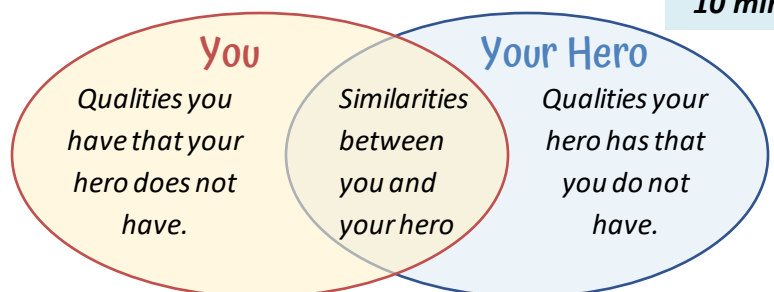
2. Learners should then present their heroes to a partner and include following in their presentation:

5 mins

- Why do you consider them to be a hero?
- Which quality or aspect of their life do you wish to have?
- Why is it important to you?
- What are 2 ways in which you can become more like your hero?

3. Learners will now use a Venn diagram like the one shown to compare and contrast their traits with those of their heroes.

10 mins





If needed, demonstrate how to use a Venn diagram using an example of your own.

5. Before learners describe their Venn diagrams, introduce transition words to them. Show these words and discuss with them:

10 mins

### Sequence

first  
next  
then  
moreover  
last

### Contrast

although  
while  
however  
unlike  
but

### Compare

both  
as well as  
similarly  
same as  
like

- What do you think the function of transition words is?
- Can you come up with a situation in which you would need to use transition words?

6. Learners write a paragraph comparing and contrasting their hero's traits. They must use at least 5 transition words.

5 mins

6. Learners read out their paragraphs to a peer and share feedback on the following:

- What they liked about the paragraph.
- Their use of transition words.

5 mins



In addition to presenting orally, learners can also write a short compare and contrast essay based on their Venn diagram.

7. Explain that to become more like your heroes or achieve any dream of yours, it is important to have a vision and set goals for it.

5 mins

**In this project, we will make a vision book, which represents your long-term goals, desires and action plan to achieve the life that you want.**



**Learners set a vision for themselves and make a drawing to represent their ideal day.**

1. Discuss with learners:
  - What is a vision?
  - Is it important to plan your life in line with your vision? Why/why not?

5 mins

2. Learners will make a vision book. It will be a book that represents their long-term goals, desires and action plan to achieve the life that they want.
  - With a partner, learners discuss the following questions and write their responses on different pages of their vision book. They can add drawings, pictures, etc. too.

25 mins

## My Personal Vision



1. Name 3 activities that you enjoy doing and want to continue doing throughout your life. Share the reason too.
2. Describe in detail two places where you feel safe, happy, and relaxed. How can you access these places in your life?
3. What is your dream job or career?
  1. What kind of home life would you like to have?
  2. What are 3 values you want to live by?
  3. If you could travel anywhere, where would you like to go to?
  4. What kind of friends do you want to have?
  5. What would you like to do that you haven't done yet?
  6. What kind of difference do you want to make in this world?
  7. What are some new skills or habits you want to develop?

**Learners create a chart to represent their ideal day.**

- Learners must close their eyes and envision their ideal day where they lead a happy and healthy life. From the time they wake up in the morning to the time they go back to sleep.
- Learners will create a chart to represent their ideal day using these steps:
  - Draw a large circle on paper to represent your ideal day.
  - Divide it into 24 equal sections and write numbers 1-24 on it to show the 24 hours of the day.
  - Colour the sections to show how many hours you will spend on each activity, starting from the duration and time of sleep at night.
  - Continue filling the circle up with other activities in sequence of your perfect day!

**Example** →



- You can also add drawings to your circle!
- If needed, you can use colours and symbols and provide a key to name the different activities.
- Learners present their ideal day to their peers and mention the time of each activity in the 24-hour format.

**Learners will reflect:**

- How much of the daily activities are you already doing?
- Which ones would you want to develop this year?
- How can you ensure that you start doing that? What steps will you take?

**Learners set SMART goals for their vision.**

1. Learners discuss in pairs to decide which of the following goals is best and why:

10 mins

- Goal 1: I will be a good public speaker.
- Goal 2: I will practice public speaking.
- Goal 3: I will be a more confident public speaker in one month by practising in front of a mirror and my family.

2. Explain the concept of SMART goals to learners.

10 mins

**S**PECIFIC

What is the exact goal that you are trying to accomplish?

**M**EASURABLE

How will you be able to see that you are making progress?

**A**TTAINABLE

Is this a goal that you think you can actually reach?

**R**ELEVANT

Is this something that's important to you right now?

**T**IME-BOUND

When do you think you'll be able to reach your goal?

- Ask them to discuss why it is important for goals to be SMART.

3. Learners must come up with 3 SMART goals based on the vision they have set for themselves on the previous day.

15 mins

4. Learners share their goals with a partner and score their partner's goals using this table:

5 mins

Goal	Specific 2 points	Measurable 3 points	Attainable 5 points	Relevant 2 points	Time Bound 3 points	Total (out of 15)
Goal 1						
Goal 2						
Goal						

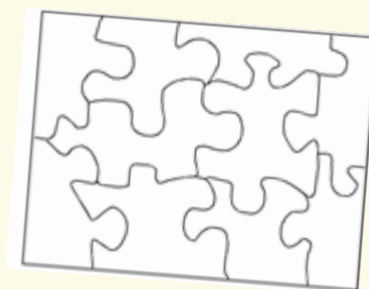
## Activity

20 mins

**Learners present their goal through an engaging puzzle.**

Deliver the following instructions to the learners:

1. Once the drawing is complete, turn the page and draw blank jigsaw puzzles pieces. You can make it as easy or difficult as you like!
2. Then, cut out the puzzles.
3. Exchange your puzzles with a partner and try to piece the whole drawing together!
4. Draw a picture of a goal you want to accomplish this year.
5. Try and guess what your partner's goal is all about!



**Learners will reflect with their peers:**

What goal did you draw in your puzzle? Why is this goal important to you?

**Learners choose habits to inculcate, create a habit tracker and calculate the probability of them achieving their goals.**

- Learners list two simple habits they need to inculcate to achieve the 3 goals they have set for themselves. For example:

15 mins

**GOAL:** *I will be a more confident public speaker in one month by practising in front of a mirror and my family.*

- HABITS:**
- Practise speaking for 1 minute in front of the mirror or a family member daily.
  - Learn the meaning and correct pronunciation of 2 new words every day.

- Learners share what they wrote with a peer, collect feedback from them to make it realistic and achievable. Once finalised, they can add the habits to the respective pages in their Vision Book.

10 mins

## Activity

**Learners create a habit tracker and calculate the probability of achieving their goals in different scenarios.**

40 mins

- Learners create a weekly habit tracker and write their 6 habits in it.

Habit	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7

- Learners exchange trackers with a partner.
- For each habit and each day in the upcoming week, partners must add a ✓ if it is likely for their partner to accomplish it and a ✗ if they think it is unlikely. (This is based on their prediction about whether they observe their partner following the required habits, in order to reach their goals.)
- Learners discuss the rationale for their inputs.



- Based on their partner's inputs, learners must calculate the probability of them achieving their goals this week. Also, calculate the percentage.

$$\text{Probability} = \frac{\text{No. of tick marks}}{\text{Total no. of days}}$$

$$\text{Percentage} = \frac{\text{No. of tick marks}}{\text{Total no. of days}} \times 100$$



-If needed, explain the concept of probability to the learners.

Explain that probability lies between 0 and 1.

0 means that the event will not occur (they will not achieve their goals). 1 means the event will occur (they will achieve their goal)

Thus, a value closer to 1 means the chances of them achieving their goal is higher.

- Learners discuss with their partner:
  - What was the rationale behind your inputs to your partner?
  - If this pattern continues, what are the chances that you will achieve your goal in the desired time frame?
  - Do you think our motivation to do something reduces with time?
  - What can we do in such situations to stay motivated?

## Day 5

# My Vision Book

*Learners use the WOOP technique to prepare for challenges.*

- Discuss with learners: What are some challenges you may face while trying to achieve your goals? 5 mins
- Explain that while working towards a goal, we may come across challenges. It is important to plan ahead so that we are prepared. For each goal, we can use the **WOOP Technique** to stay on track: 10 mins

**W**  
WISH

*Which goal do you want to achieve?*

**O**  
OUTCOME

*How will you know when you have achieved it?*

**O**  
OBSTACLE

*What are your main challenges?*

**P**  
PLAN

*How can you overcome the challenges?*

3. Learners note this plan down in the respective pages of their Vision Book for each goal.

15 mins

3. Learners then assign the following roles to friends or family to ensure that they work on your goals daily:

5 mins

Name	Role	What they should do
	<b>Motivator</b>	On days you feel like giving up, they encourage you towards your goal.
	<b>Challenger</b>	They track your progress and hold you accountable when you do not perform.
	<b>Ideas</b>	They brainstorm new ways in which you can be consistent in your efforts.

5. Learners add a cover page and decorate their Vision Book.

5 mins

5. Learners present their Vision Book to their peers and receive feedback on:

10 mins

- The parts that are done well.
- Things that can be improved, if any.

7. Learners conclude this project by doing the following:

10 mins

- Draw an image of their future self, this can include details on where they are, what they are doing, things they have achieved etc.
- Choose two most important habits they wish to inculcate today onwards that will help them achieve their vision.



Quotes can inspire us to keep moving forward when we feel low or they can remind us why we started in the first place. Learners can reflect on their favorite quote and their own ones too!

