Numeracy Level 3

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Student Worksheet

Answer the following questions in 20 minutes.

1. Fill the missing numbers:

   a. $\frac{3}{5} = \frac{\quad}{35}$ b. $\frac{\quad}{8} = \frac{6}{16}$ c. $\frac{1}{6} = \frac{\quad}{36}$

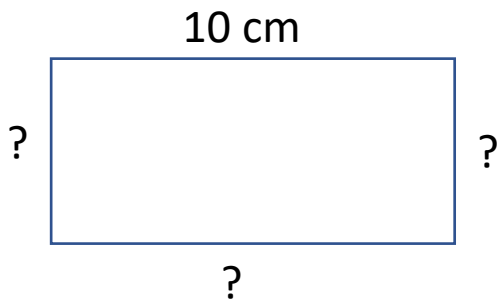
2. Solve:

   10.25 + 12.75 = _____ 34 - 32.75 = _____

   28.5 ÷ 10 = _____ 16.5 X 4 = _____

3. The side of a square brick is 20 cm. Find the number of such bricks needed to be laid for a rectangular path of length 1000 cm and breadth 500 cm.

4. If the perimeter of the rectangle is 30 cm.
   (i) Find the missing side.
   (ii) Find the area of the rectangle.



5. John wants to split $ 30.15 between 3 of his children equally. How much will each child get?

6. What is 5 % of 20?

7. Complete the pattern:

   A A D B B A A D _____ _____ _____

   7 14 21 28 _____ _____ _____

8. What is the probability of getting 3 or 5 while rolling a die?

Daily Routine

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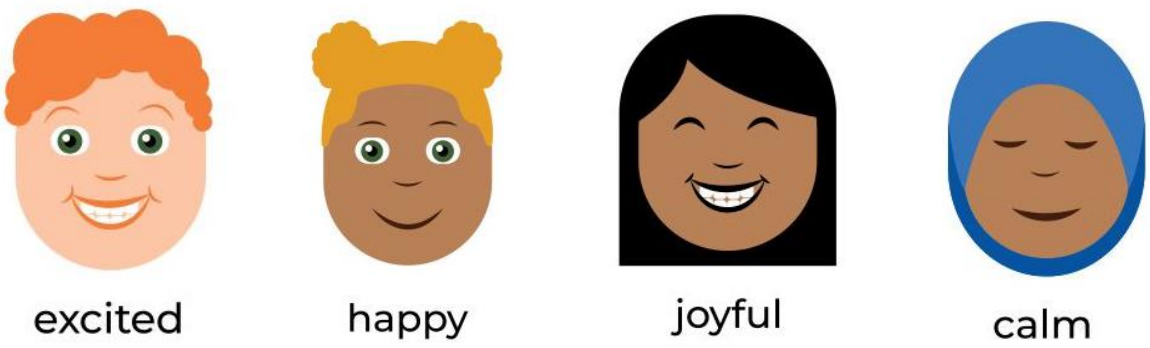
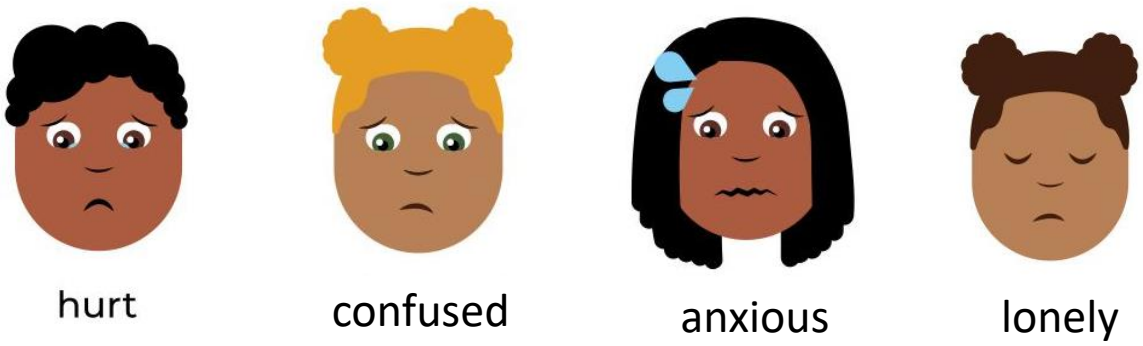
My Emotions

Write how you feel **everyday** in your notebook.

Today, I feel _____



excited happy joyful calm



hurt confused anxious lonely

frightened annoyed enraged

Day 1 Week 1 Bartering Activity

Player	Food	Clothing	Medicine	Others	Total
Player 1					
Player 2					
Player 3					
Player 4					

Day 2 Circles and Rectangles

Going to school *Singing* *Playing with my friends*

Painting *Helping my family* *Flying a kite*

Spending time with animals *Dancing* *Reading* *Writing*

Going to the park *Playing games* *Playing a musical instrument*

Learning new things *Watching a movie* *Swimming*

Studying *Keeping my things neatly* *Laughing*

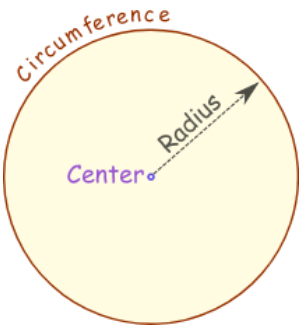
Helping others *Travelling with my family* *Telling the truth*

Watching a cartoon *Sleeping on time* *Eating fruits*

Making new friends *Helping my family* *Growing a plant*

Day 3

Circumference



Find the circumference of a circle using a thread.

Circumference ÷ Radius = _____ or **π**

π = 3.14

- Circumference = 2πr
- Area = = πr ^{2}

Find the circumference and area of your coin using the formulae.

Demand Curve

We will show our demand table as a graph.

y - axis **x - axis**

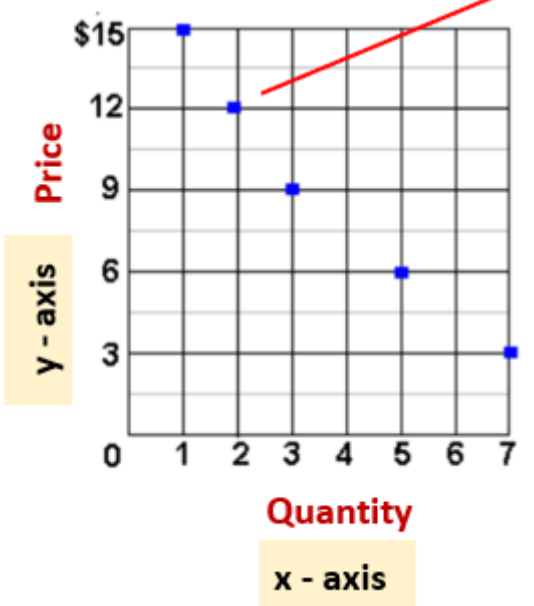
Price	Quantity demanded
15	1
12	2
9	3
6	5
3	7

Make a similar table for the items in your shop.

Example

Ordered Pair (x, y)

(2, 12)



- Construct the graph in your notebook.
- Plot the (x, y) points from the table.
- Draw a line through the points.

This line is called the demand curve.

Day 4 Coffee Shop Math

Write the prices for each item below. Ask a friend to fill in the blanks for you to solve!

Coffee Shop Menu


Chocolate sundae _____


Hot chocolate _____


Carrot cake _____


Strawberry cake _____


Milkshake _____

Mia ordered  and  .

She paid _____. How much should she get back?

Ana ordered    .

She paid _____. How much should she get back?

Ali ordered  .

He paid _____. How much should he get back?

Jon ordered  .

He paid _____. How much should he get back?

Day 5

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Imagine your budget is $ 50. How many bananas and apples can you buy with it?

$ 2

$ 5

Try different combinations like this:

Item	Price	Quantity	Total
Apple	$ 2	2	2 x 2 = $ 4
Banana	$ 5	10	5 x 10 = $ 50
Total			4 + 50 = $ 54

Week 2 Day 1

Probability (P) shows us how likely an event is to occur.

Circle the option.

Event	I think it is . . .	
It will be sunny tomorrow.	Likely	Unlikely
I will play with a friend today.	Likely	Unlikely
I will fly in a plane in 2 days.	Likely	Unlikely
I will eat a fruit today.	Likely	Unlikely

$$\text{Probabilty} = \frac{\text{Favorable outcomes}}{\text{Total outcomes}}$$

Example:

$P(red) = \frac{7}{12}$ ← Number of red marbles / ← Total number of marbles

$P(blue) = \frac{5}{12}$ ← Number of blue marbles / ← Total number of marbles

Coin Probability

When you toss a coin once, there are 2 possible outcomes:

Head (H) or **Tail (T)**

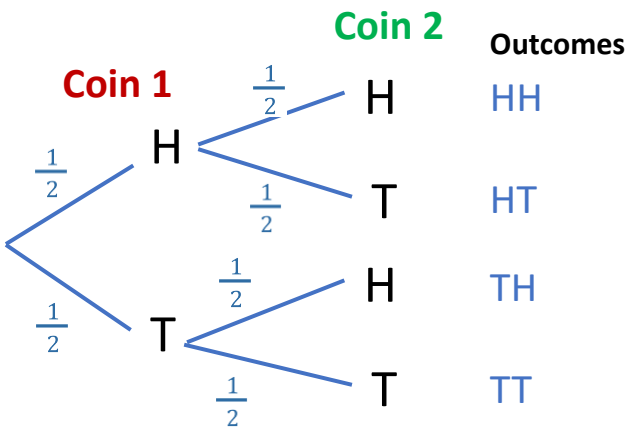
Probability of getting Head → P (H) = $\frac{\text{No. of heads}}{\text{Total no. of outcomes}}$

So, P (H) = $\frac{1}{2}$ and P (T) = $\frac{1}{2}$

Tree Diagram

What are the possible outcomes when we toss 2 coins?

We can show this as a Tree diagram.



Using this, we can find the probability of getting 2 heads:

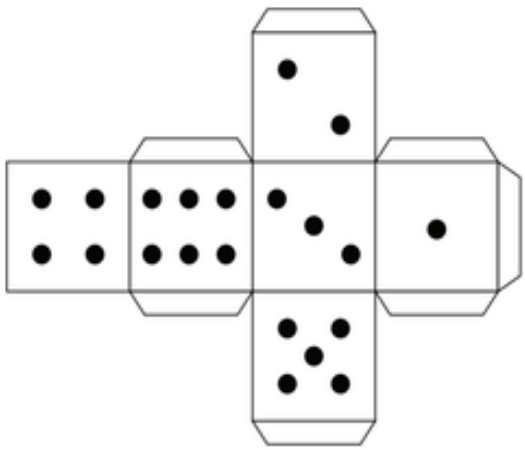
P (HH) = P (H) X P (H)

$= \frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

Day 2

Make a Die

- Draw and cut the picture.
- Fold along the lines and stick together to form a cube.



Exploring Probability

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Two coins are tossed. What is the probability of getting 1 head?

We can add probabilities:

P (1 Head) = P (HT) + P (TH)

$$= \frac{1}{4} + \frac{1}{4}$$

$$= \frac{2}{4} \text{ or } \frac{1}{2}$$

Calculate:

- P (At least 1 Head)
- P (1 Tail)
- P (At least 1 Tail)

Find the same for when 3 coins are tossed too.

Weather Tracking

Observe and record the weather in the table.

Is it cloudy, rainy, windy, or sunny?

Roll	Weather
Day 2 (today)	
Day 3	
Day 4	
Day 5	

Day 3

Roll 2 dice 10 times

Calculate:

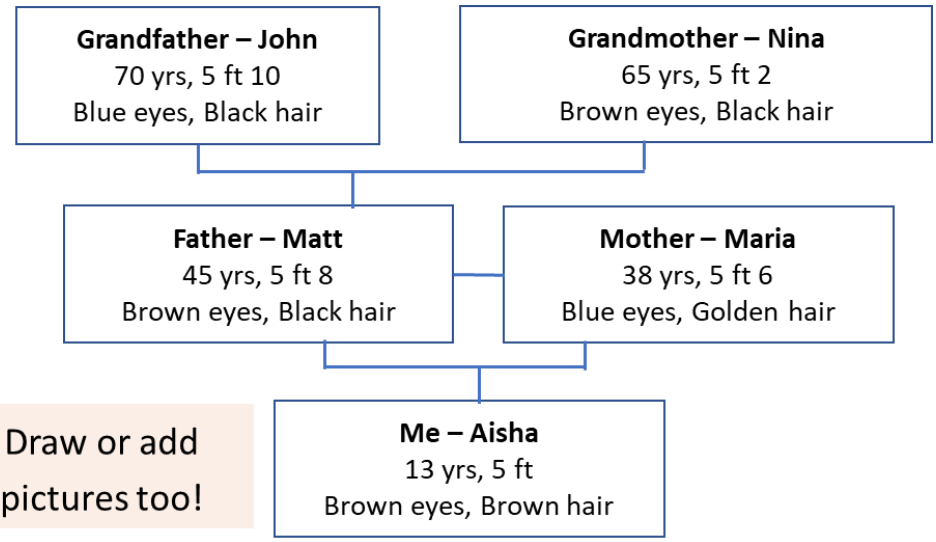
- P (6, 3)
- P (5, 1)
- P (3, 2)
- P (7, 1)
- P (Same number on both dice)

Roll	Die 1	Die 2
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Day 4

Relate your own characteristics to the family tree.

Example:



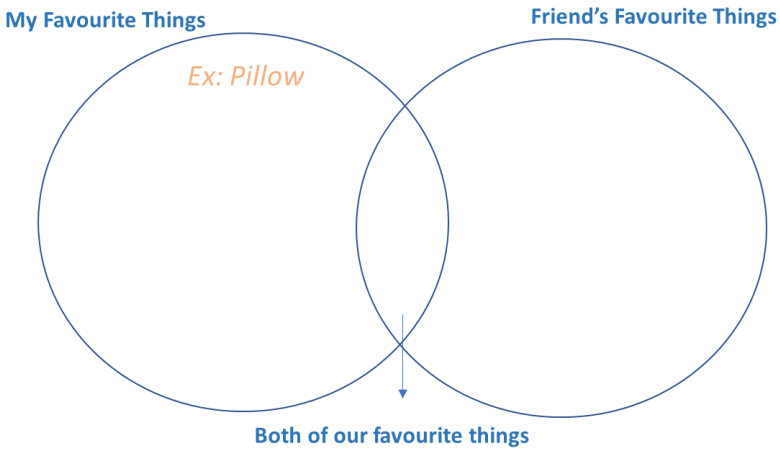
Draw or add pictures too!

What are the chances your future child will have a certain characteristic?

Eg: P (Black Hair) = $\frac{3}{5}$ ***Likely***

Day 5

Draw the Venn Diagram as shown:



Imagine all the things from the Venn diagram is put into a bag. If you pick out any one thing, find the probability of getting:

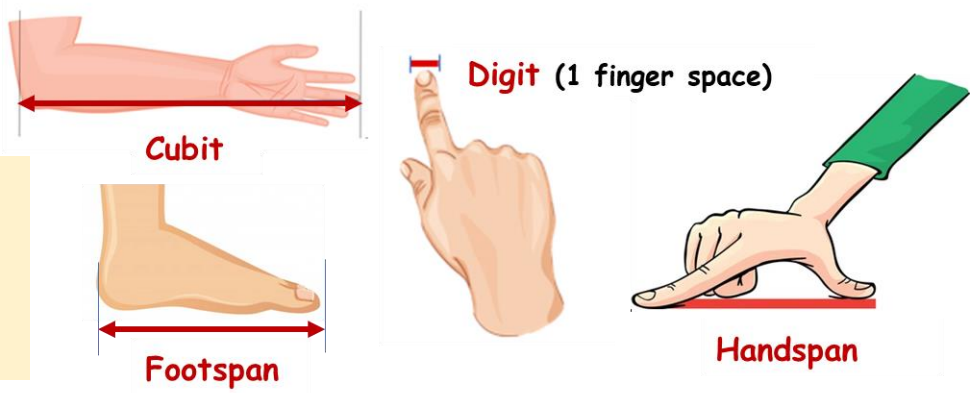
- Your favourite thing $= \frac{\text{Total no. of your favourite things}}{\text{Total no. of things in the Venn diagram}}$
- Friend's favourite thing
- Favourite things you have in common

How do we predict the weather?

- If it was sunny for 2 out of 4 days, P (Sunny) = $\frac{2}{4}$
- To find the percentage, multiply it by 100 → $\frac{2}{4}$ x 100 = 50%
- So, next week, the probability that it will be sunny is 50 %

Day 1 Week 3

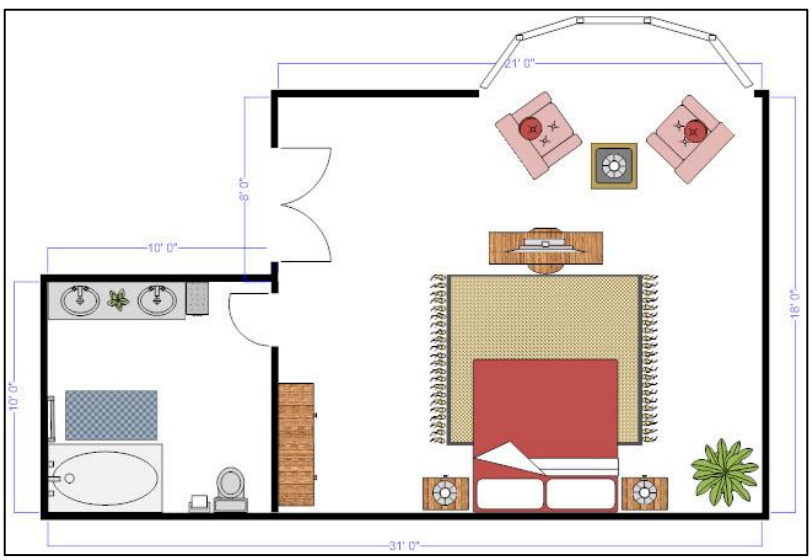
In the past, people measured things using their bodies.



Day 3

Observe and find:

- The walls
- The doors
- The no. of rooms
- The types of rooms
- The objects you see

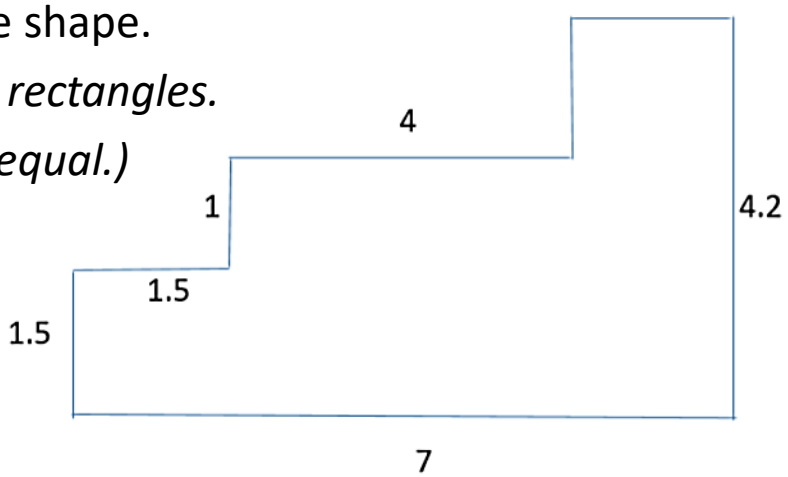


Solve the following:

Draw the information to solve it!

- A rectangle has an area of 35 m^2. One of its sides measures 5 m, measure the other side.
- A rectangle has an area of 20 Squared Feet. Its length is 5 Feet. What is its breadth?
- Draw a floor map of a room whose Length is 14 Feet, and Breadth is 12 Feet. **Scale: 1 digit = 2 feet of the room**

- Find the area of the shape.
  *(**Hint:** Divide it into rectangles. Opposite sides are equal.)*



Day 4

How many tiles will we need for this floor?

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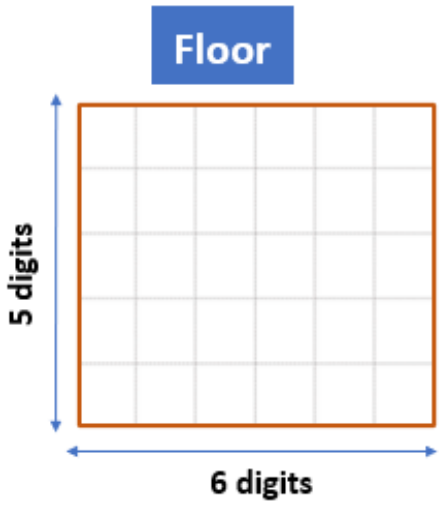
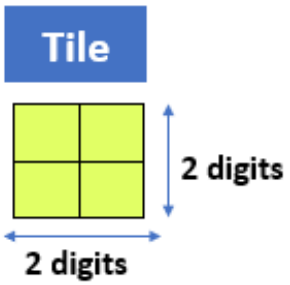
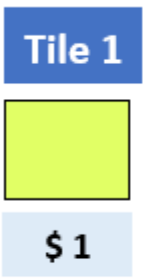
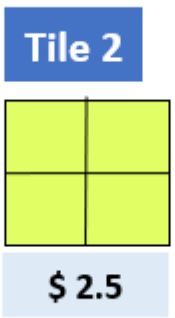




- Find the area of the floor.
- Find the area of 1 tile.
- No. of tiles = $\frac{\text{Floor's Area}}{\text{1 Tile's Area}}$ needed

How many tiles of each type will you need for your house's floor? Calculate the total cost of tiling as per the rates below.





Day 5

Painting Areas

Assume that 1 footspan = 1 meter (m)

Find the total paintable area of your house (in squared meters).

- Floor Area = _____ m^2
- Ceiling Area = Floor Area *(Why?)*
- Wall 1 Area = _____ m^2

(Find the areas of all the wall, subtract the area of doors and windows.)

Total Paintable Area = _____ *(Use addition.)*

Day 5 Design a House

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Bathroom: 9 sq. meters

Kitchen: 15 sq. meters

Living Room: 20 sq. meters

Bedroom: 10 sq. meters

Each square represent 1 square meter.

Day 1 Week 4

Identify the animals from their patterns.

Day 1 My Habit Tracker

✓ I did ✗ I didn't

Question	Day 1	Day 2	Day 3	Day 4	Day 5
Did I lose my temper today? **Think:** When did it happen? What happened before and after that?					
Did I have bad dreams? **Think:** What did I do during the day that day? When did I have my last meal?					

Day 2

Use the code to try these musical patterns:

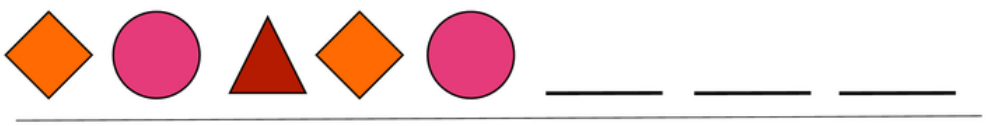
A	B	C	D
			
Snap your fingers.	*Clap your hands.*	*Stomp your feet.*	*Tap your thighs.*

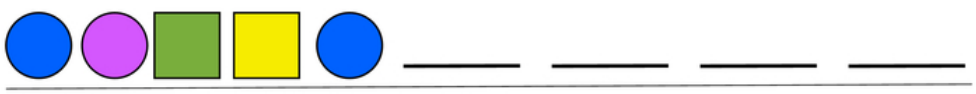
Try this! B D A

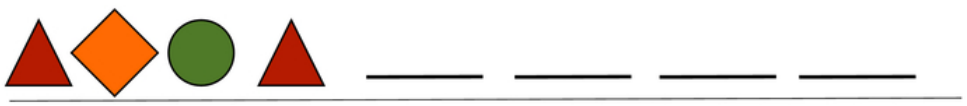
Symmetric Pattern A A C C A A

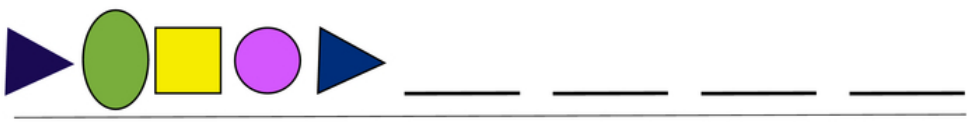
Cluster Pattern B B B B C D

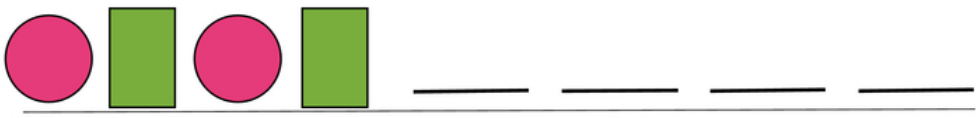
Finish the following patterns.







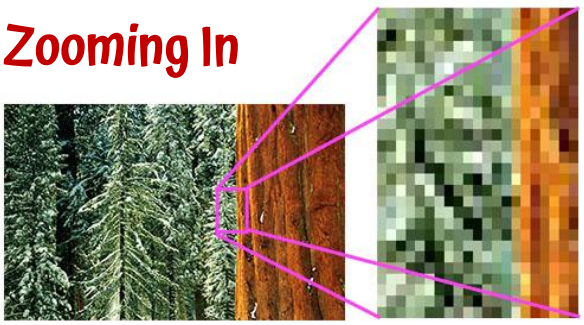


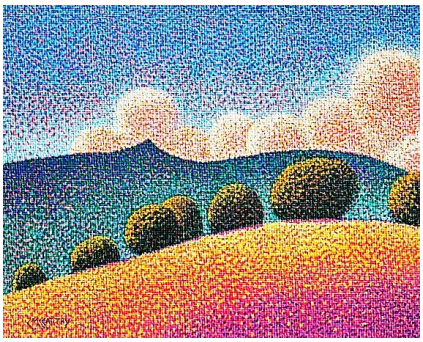


Day 3

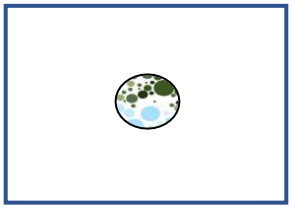
Pointilism

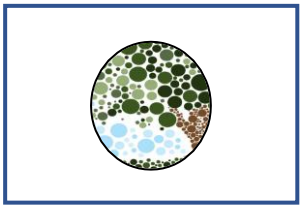
Zooming In

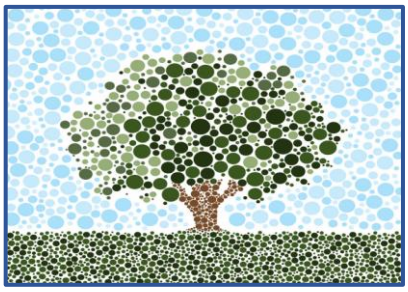




Zooming Out







Day 4

What comes next in these patterns?

1 0 1 0 1 0 1 _____ , _____ , _____, _____

K L L A K L L A _____ , _____ , _____

Sit a**S**k ca**S**t bag**S** _____ , _____ , _____

2 3 5 1 1 2 3 5 1 1 _____ , _____ , _____

Ate **B**ot **C**at **D**og _____ , _____ , _____, _____

3 6 9 12 _____ , _____ , _____, _____

9 18 27 36 _____ , _____ , _____, _____

30 26 22 18 _____ , _____ , _____, _____

1000 200 40 _____ *(Hint: Divide by a number.)*

Fibonacci Sequence

0 1 1 2 3 5 8 …

In this sequence, each number is the sum of the two numbers before it. What are the next 3 numbers?

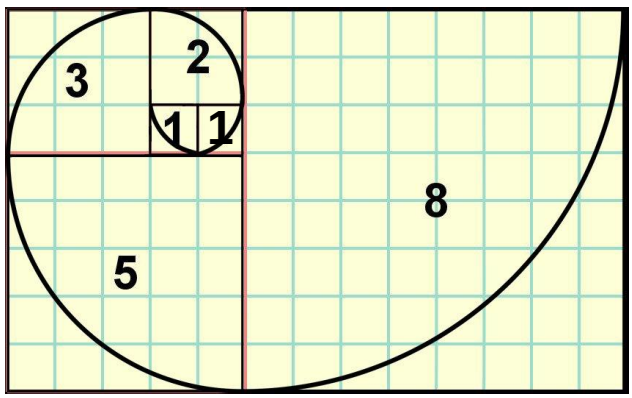
Terms in the Sequence	Previous Term	Ratio
1	1	1
2	1	2
3	2	1.5
5		
8		

Fill this table. What do you notice about the ratios?

Ratio:
3 ÷ 2 = 1.5

The ratios seem to be 1 close to 1.6. This is called ***phi.***

Draw the number sequence in a grid and connect it to form a spiral. It goes till infinity!



Observe this in nature.

1 Petal

3 Petals

5 Petals

8 Petals

Day 5 Paul, The Pattern Detective

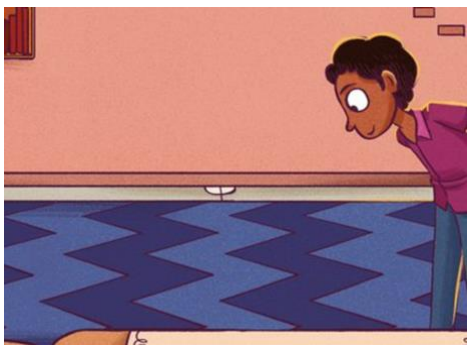
Paul loves searching for patterns. "I am going to be a pattern detective today! Let's go find patterns!" said Paul.

Paul found a pattern hanging on the tree. It is called a hive and bees live in it. It is made up of many hexagons stuck to each other. A hexagon is a shape with six sides.

Draw a hexagon.

Before going inside the house, he notices that the bricks of house make a pattern.

What is the shape of the brick? Does it have equal sides?



Inside the house, Paul saw a pattern on the carpet.

Draw your own carpet pattern.

He went to the kitchen and saw a pattern on the table. "What is this fruit?" Paul asked his Mom. "It is a _____," she said.

Draw 2 patterns you see in other fruits.

The next day at school, he told his friends all about the patterns he found. "Join me today! Let's all be pattern detectives!" said Paul.