

- 5 There is a list of numbers:

5, 6, 9, 11, 15, 16, 20, 22

Pip put these number in the diagram below. A number is misplaced, which number is it?

	Multiple of 3	Not a multiple of 3
Even	6, 22	16, 20
Odd	9, 15	5, 11

- A. 6 B. 11 C. 16 D. 22

- 6 Children in Year 3 were asked if they could swim. The table below shows some of the results.

	can swim	cannot swim	Total
Class 3A		6	
Class 3B	17		21
Total			40

How many children in Class 3A can swim? _____

- 7 The 36 pupils in Years 3 were asked about their favourite fruits.

The table below shows the results. Some of the numbers are missing.

	Apples	Cherries	Total
Girls	5		12
Boys		8	
Total			36

How many pupils in Year 3 like apples the most?

- A. 7 B. 24 C. 16 D. 21

8 Find the missing values.

$$A = \underline{\quad}, B = \underline{\quad}, C = \underline{\quad}$$

$$\begin{array}{r} C & 6 & A \\ + & 2 & B & 5 \\ \hline 5 & 8 & 2 \end{array}$$

9 Find the missing values.

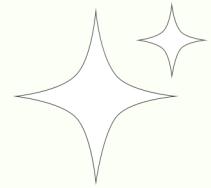
$$A = \underline{\quad}, B = \underline{\quad}, C = \underline{\quad}$$

$$\begin{array}{r} 5 & B & 1 \\ - & 1 & 3 & A \\ \hline C & 2 & 3 \end{array}$$

10 Find the missing values.

$$A = \underline{\quad}, B = \underline{\quad}, C = \underline{\quad}$$

$$\begin{array}{r} 8 & \square \\ + & \square & A & 5 \\ \hline C & B & 2 & 2 \end{array}$$



Lesson 4

Division with Shapes



Let's Look Back

Knowing Shapes

About this Lesson

Division with Shapes

Let's Look Ahead

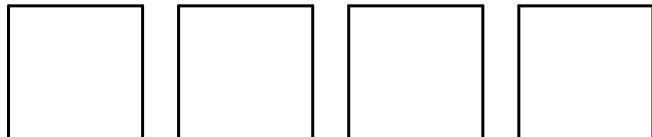
Finding Area by
Counting Squares

Objectives

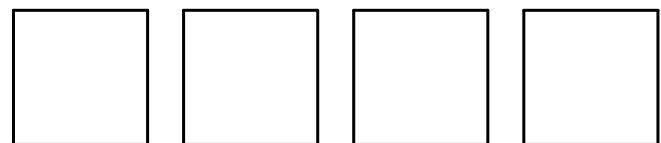
- Learn 'Count-Divide-Identify-Split' to divide shapes into equal parts
- Learn to divide shapes with grids which are not divisible

Let's Get Ready

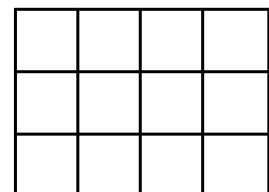
- 1 Divide each square below into 2 identical parts with different ways.



- 2 Divide each square below into 4 identical parts with different ways.

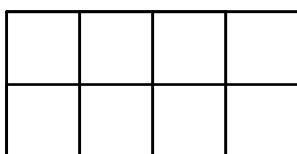
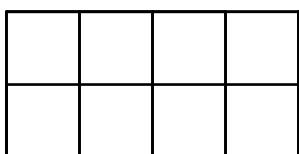
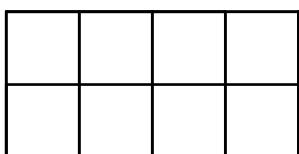


- 3 The area of each small square is 1. What is the area of the whole rectangle?



Learn and Discover

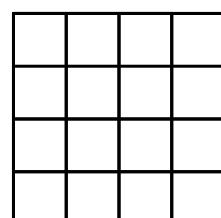
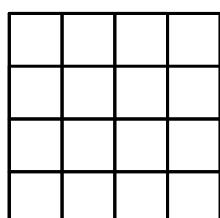
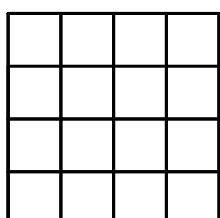
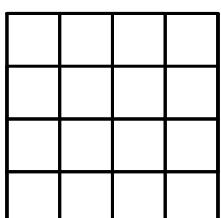
Divide the shape below into 2 identical parts with all the grids complete. Show all the possible answers you can get.



-
-
-
-
-

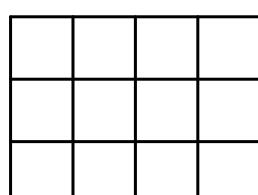
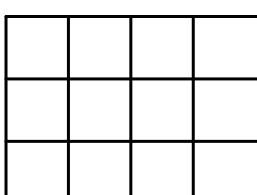
Exploration 1

Pip needs to divide the shape into 4 identical parts. Try to find different ways to make it.



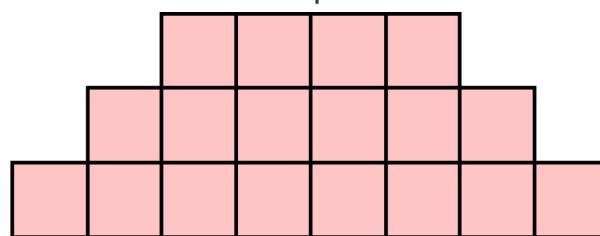
Practice

Bud needs to divide the shape into 4 identical parts. Try to find different ways to make it.



Learn and Discover

Divide the shape below into 6 identical parts.



(1) How many squares are there in total? _____

(2) How many squares are there in each part? _____

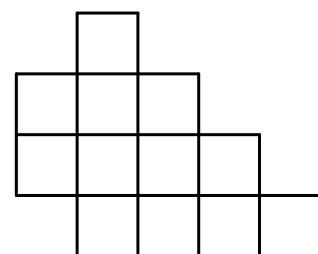
(3) What would each part look like?

(4) Try to divide it in the picture.

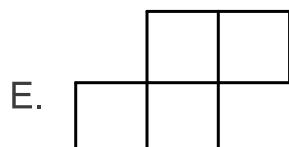
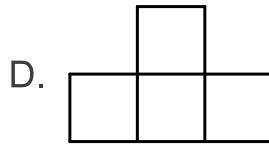
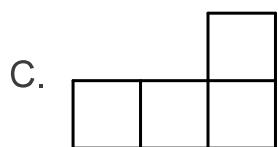
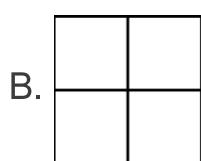
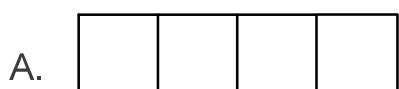
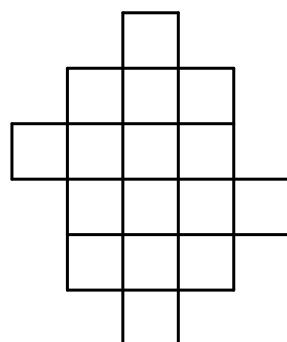
• • • • •

Exploration 2

- 1 Divide the shape into 4 identical parts.



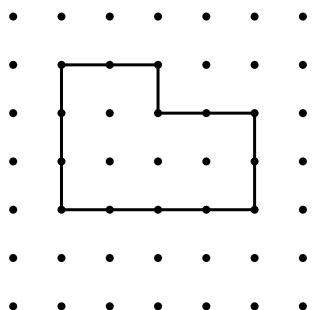
- 2 Cut the figure shown below into four identical pieces. What does each of the pieces look like?



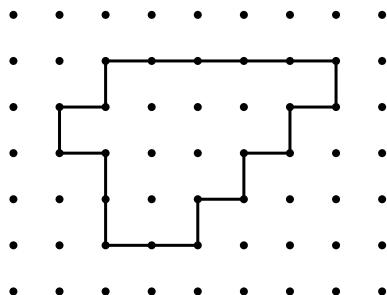
Exploration 3

Divide these shapes into

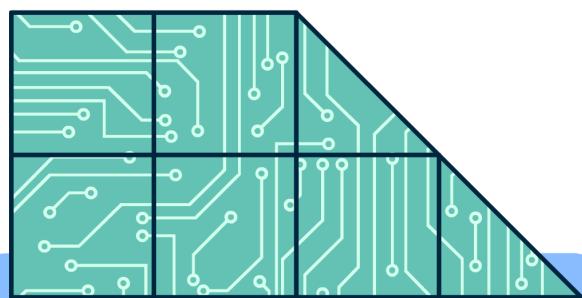
- ① 2 congruent pieces



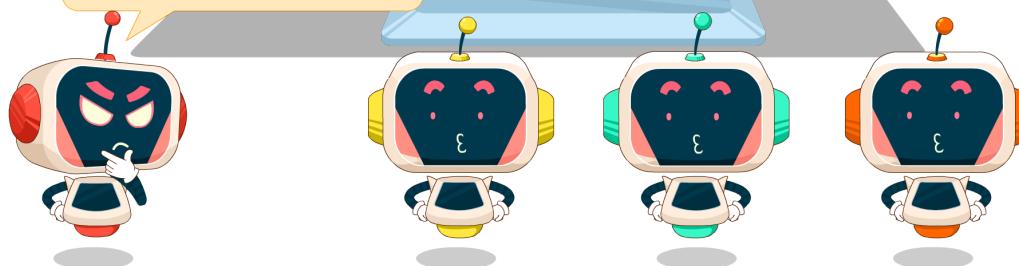
- ② 3 congruent pieces



Learn and Discover

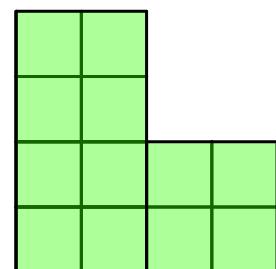


Divide the shape into 4 identical parts. Let's try!

A light orange rectangular area representing a lined notebook page. A vertical line of five small circles is on the left side, creating a margin. The main body of the page has horizontal lines for writing.

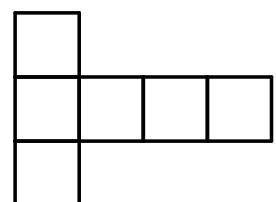
Exploration 4

Divide the shape into 8 identical parts.



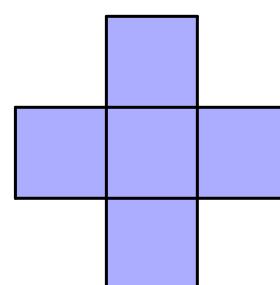
Practice

Divide the shape into 4 identical parts.

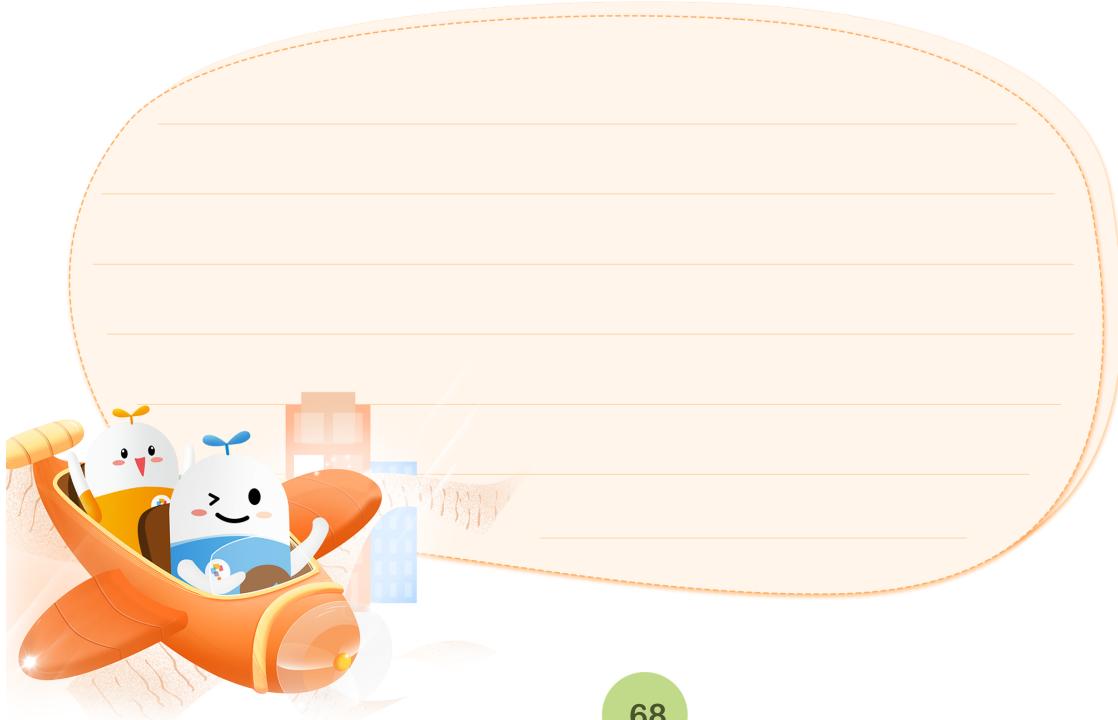
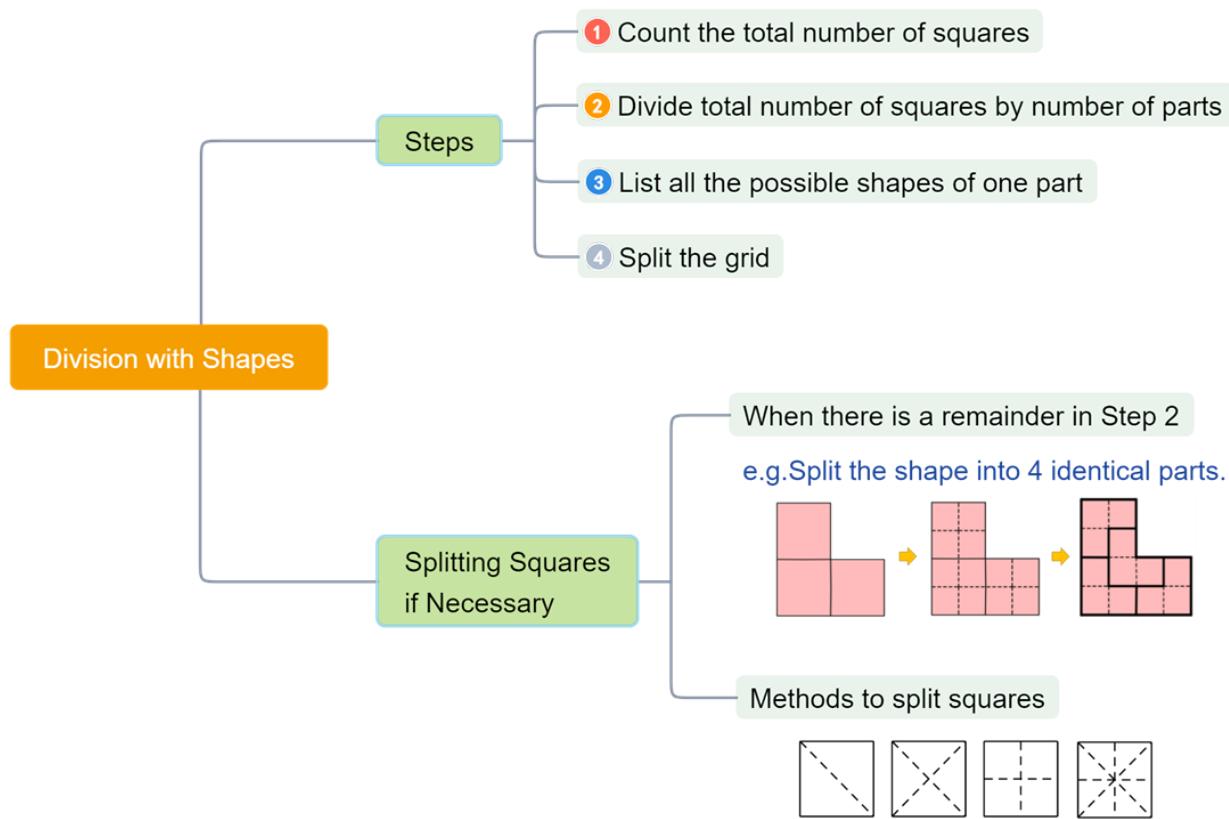


Challenge

Divide the shape into 4 identical parts.



Knowledge Map

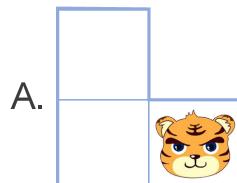
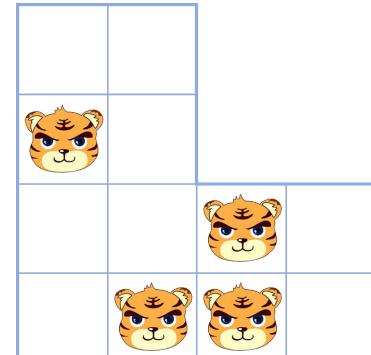


Homework

Teaching Time

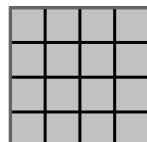
Have you learnt everything from the class? Share your thoughts with your family on how to solve the question below.

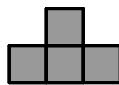
Try to divide the shape below into 4 identical parts. Each part should contain one and only one tiger. What does each of the pieces look like?



Day 1

1

Ann has a square sheet of paper:  . She cuts these pieces:



out of the sheet as many as possible.

How many pieces does she get? ()

A. 1

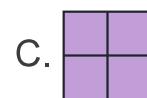
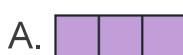
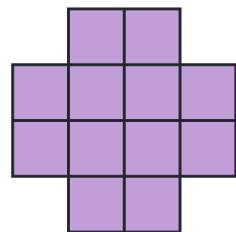
B. 2

C. 3

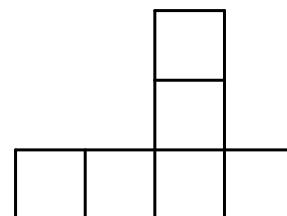
D. 4

E. 5

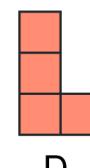
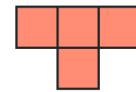
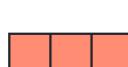
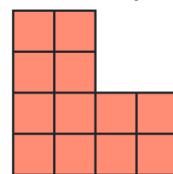
- 2 Divide the following figure into four pieces of the same size and shape along the lines. What does each of the pieces look like?



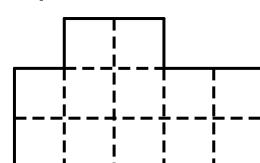
- 3 Divide the shape into 3 identical parts.



- 4 Divide the following figure into four pieces of the same size and shape along the lines. What does each of the pieces look like? _____



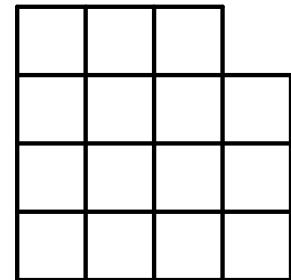
- 5 Divide the shape into 4 identical parts with all the grids complete.



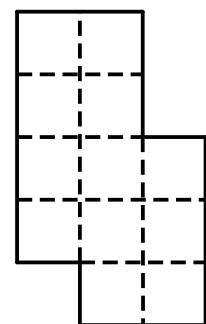


Day 2

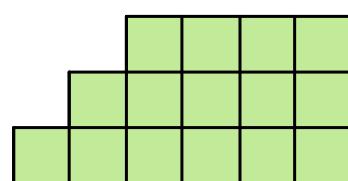
- 1 Divide the shape below into 5 identical parts with all the grids complete.



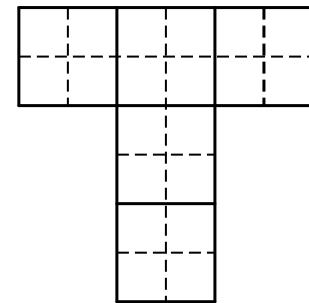
- 2 Divide the shape into 4 identical parts with all the grids complete .



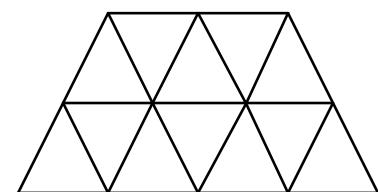
- 3 Divide the shape below into 5 identical parts with all the grids complete.



- 4 Divide the shape into 4 identical parts. How many smaller squares are there in each part?



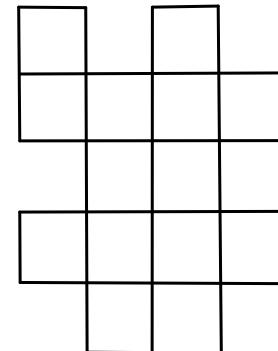
- 5 Divide the shape into 4 identical parts.



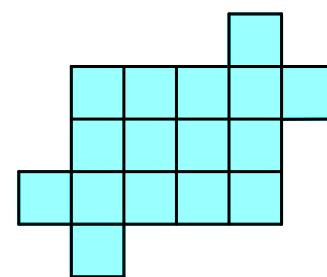


Day 3

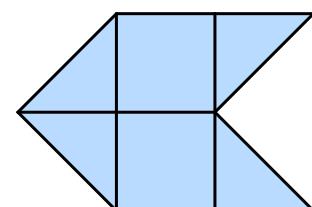
- 1 Divide the shape below into 4 identical parts with all the grids complete.



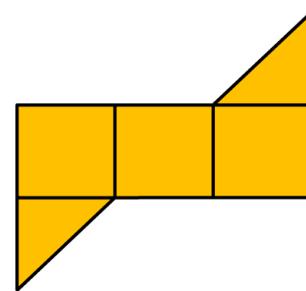
- 2 Divide the shape below into 4 identical parts .



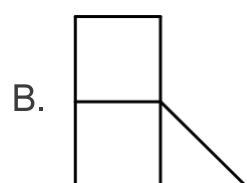
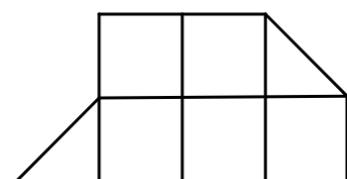
- 3 Divide the shape below into 4 identical parts .



4 Divide the shape below into 4 identical parts .



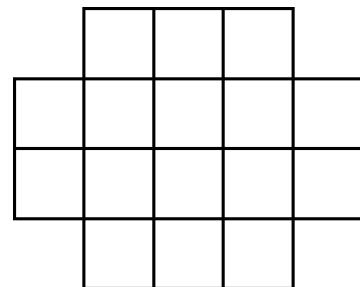
5 The figure shown is divided into 4 identical pieces. What does each of the pieces look like? ()



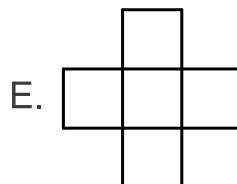
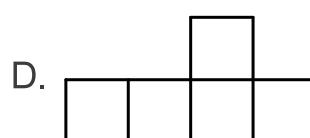
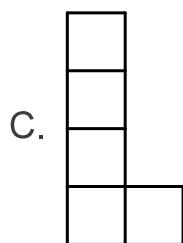
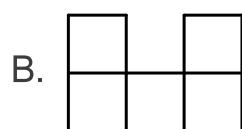
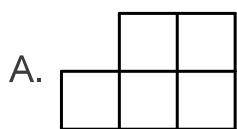
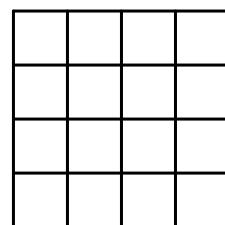


Day 4

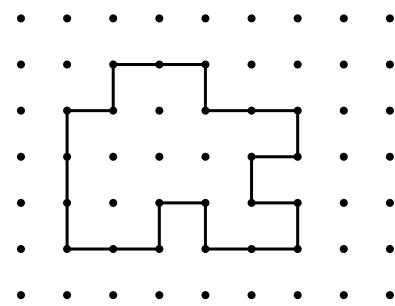
- 1 Divide the shape below into 4 identical parts with all the grids complete.



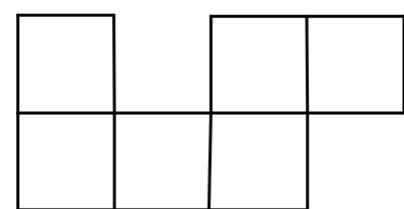
- 2 The figure shown to the right is divided into three identical pieces. What does each of the pieces look like? ()



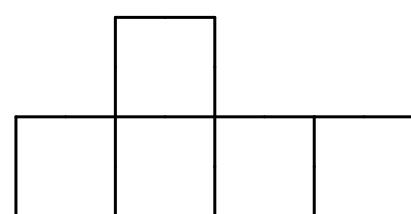
3 Divide the shape into 3 identical pieces.

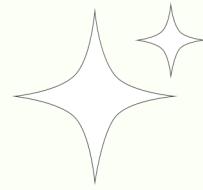


4 Divide the shape into 4 congruent pieces.



5 Divide the shape into 4 identical parts.





Lesson 5

Counting with Tree Diagrams



Let's Look Back

Listing Method

About this Lesson

Counting with Tree
Diagrams

Let's Look Ahead

Counting with Tables

Objectives

- Learn to count with tree diagrams
- Learn to use tree diagrams to solve counting problems within different backgrounds

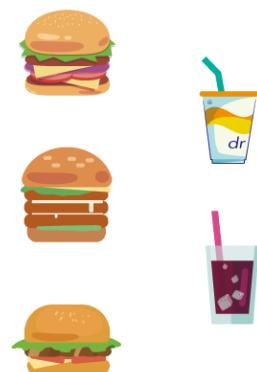
Let's Get Ready

- 1 Without using numbers twice, you can make _____ different two-digit numbers with 1, 3 and 7.

- 2 Emily has 2 dresses and 2 pairs of shoes. She needs to choose an outfit (a dress and a pair of shoes) for the birthday party. There are _____ different outfits that Emily can choose from.



- 3 Windy's Burger Shack has a new special combo that contains a burger and a drink. There are 3 different burgers and 2 different drinks available to choose from. There are _____ different combos in total.



In Class

Learn and Discover

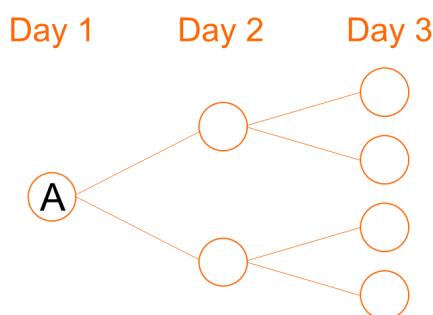
Pip buys some apples, bananas and cherries. He is going to eat them in the following 3 days. He only eats one kind of fruit a day, and he does not eat the same kind of fruit for two consecutive days.

- (1) If he eats apples on the first day, how many different fruit eating options does he have for the three days?
- (2) If he eats bananas on the first day, how many different fruit eating options does he have for the three days?

Step 1 Use letters to represent fruits.



Step 2 If he eats **apples** on the first day, What kind of fruit can he eat on the second day? Complete the tree diagram below.



Step 3 What if he eats bananas on the first day? Can you draw a tree diagram?

Handwriting practice lines for drawing a tree diagram for Step 3.

Exploration 1

Christmas is coming, and since Bob's parents can't take care of him at home for 4 days while they are on a business trip, he is going to either Grandpa's house, Grandma's house, or Aunt's house. Bob goes to Grandpa's house on the first day. If he must change to a different house each day thereafter, he will have a total of _____ accommodation plans for these four days.



- A. 4 B. 8 C. 12 D. 24

Exploration 2

Bud plans to study Maths, English or Science for the next five days. She would study one subject each day, but not the same one on two consecutive days. She would like to start with Maths on the first day, and end with Maths on the last day. How many different ways can she plan for that?

- A. 4 B. 6 C. 8 D. 10

Practice

Mira likes to exercise very much, and she chooses to do one of three activities every day: running, swimming, or dancing. She never picks the same activity for two consecutive days. If she swims on the first day and again on the fourth day, there are _____ different exercise plans on these four days.



- A. 2 B. 4 C. 6 D. 8

Learn and Discover

Alice, Baker, Caren, and Daisy are playing ice hockey and passing a puck to each other.

(1) If Alice is the first person to pass the puck, there are _____ different travelling paths of the puck for 2 passes.

(2) If Alice is the first person to pass the puck, and the puck is passed back to her finally, how many different travelling paths of the puck for 2 passes are there?

A. 1

B. 2

C. 3

D. 4

E. 5



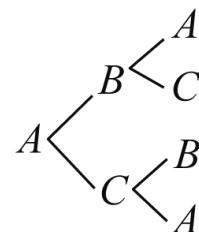
-
-
-
-
-

Reasoning

Is Pip correct? If not, please correct his answer!

Alice, Bud and Claire are passing each other footballs. Alice makes the first pass. They pass the ball three times. How many different ways can they pass the ball? _____

Pip's answer: There are 4 different ways.



Exploration 3

Annabelle, Betty, Cathy, and David are passing a ball to each other.

Annabelle is the first one to pass the ball. After 3 passes, the ball is passed back to Annabelle again. There are _____ different passing ways of the ball for the 3 passes.

- A. 2 B. 4 C. 6 D. 8 E. 10

Practice

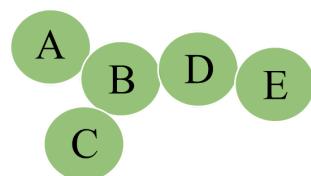
Andy, Bob and Ross are passing each other footballs. Ross makes the first pass. Given that the ball comes back to Ross after they pass the ball four times. How many different ways can they pass the ball?



- A. 2 B. 4 C. 6 D. 8

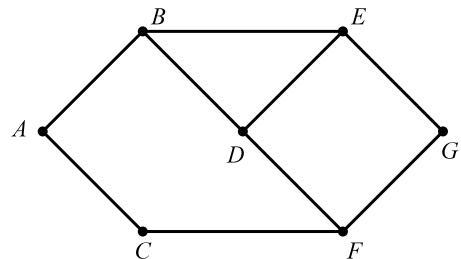
Exploration 4

As shown below, a frog is hopping between five lily pads. It always jumps from one pad to the adjacent pad. It starts on pad D. How many different patterns can it jump in if it jumps 3 times? _____



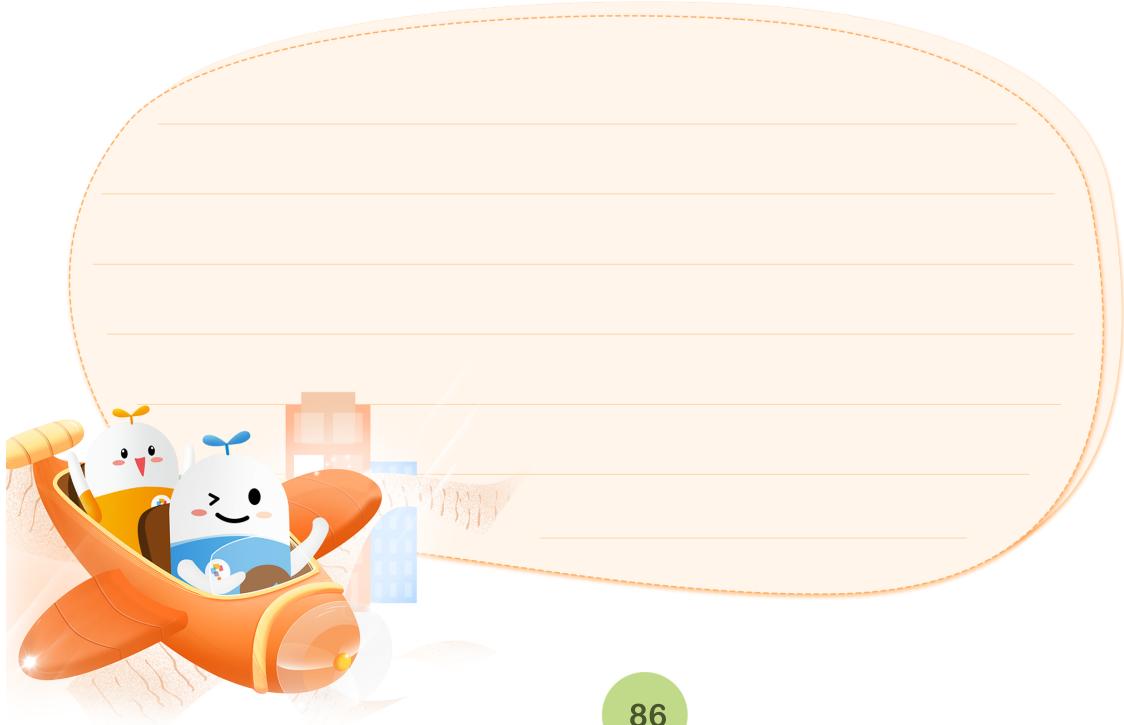
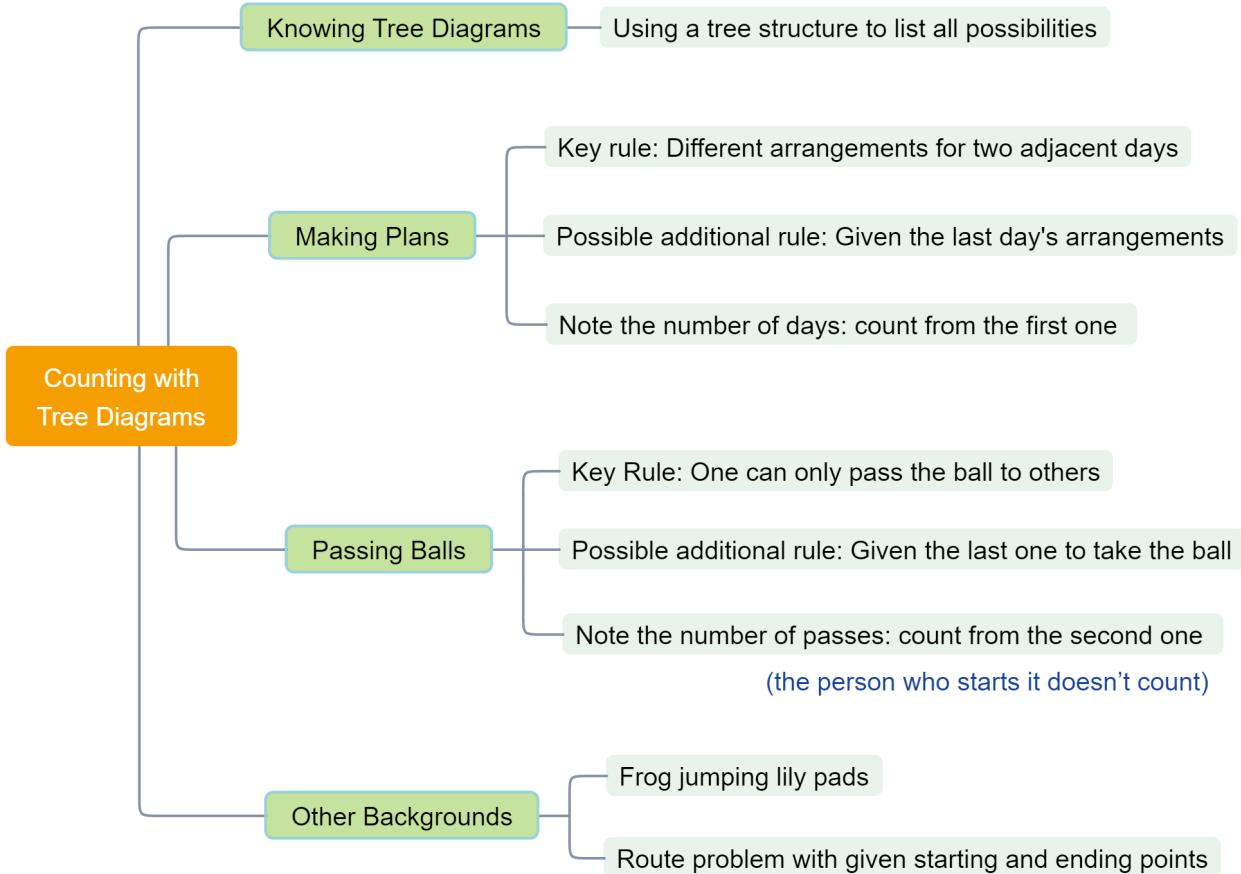
Challenge

In the following diagram, letters A – G are connected by lines of travel. By only travelling along the lines and visiting each letter no more than once on each journey, how many different ways are there to travel from A to G ?



- A. 4 B. 5 C. 6 D. 7 E. 8

Knowledge Map



Homework

Teaching Time

Have you learnt everything from the class? Share your thoughts with your family on how to solve the question below.

Mr. Rabbit prepared three types of food for his three-day vacation: carrots, pumpkins, and cabbages. He plans to eat only one type of food each day, and he will not eat the same food on two consecutive days. If he eats carrots on the first day, then how many different ways can he eat in these three days? _____



Day 1

- 1 Pip is preparing snacks for a 3 day trip. He bought jelly beans, chocolate, and lollipops. He plans to eat only one kind of snack per day and try different snacks on adjacent two days.
 - (1) If he plans to eat jelly beans on the first day, then for the second day, he is not going to eat _____, he could choose _____ or _____.
 - (2) If he plans to eat jelly beans on the first day, how many different ways can he plan for the 3 days? _____

- 2 The teacher is planning to give out fruits to students in the coming four days. There are three kinds of fruit to choose from: apples, bananas and oranges. The teacher is going to distribute one kind of fruit every day and not the same fruit for two consecutive days. If the teacher decides to distribute apples on the first day, how many different ways can he make it?
- 3 Vivian reads either a story book, a fiction book, or a novel every day. She does not read the same type of book for two consecutive days. If she reads a story book on the first day, there are _____ different reading options if she reads for 4 days.

- 4 There are 4 lunch combos (Combo A, B, C, and D) in the school cafeteria. Everyday at school, Cecilia has lunch in the cafeteria, but she does not have the same combo for two consecutive days. If she has Combo A on the first day, then she has _____ different lunch options in 3 days.



- 5 Mike has three different ways to get to the office every day: taking the train, driving, or cycling. He plans to use only one mode of transport each day, and the modes of transport on two consecutive days are different. If he chooses to cycle to the office on the first day, then how many different ways can he choose from Monday to Thursday? _____



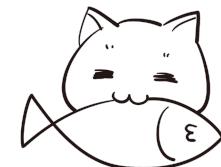
Day 2

- 1 Pip followed a fitness program that included running, swimming, and dancing. He wouldn't do the same exercise for two consecutive days. The programme is for 4 days. On the first and last day, Pip chose swimming. There are _____ different ways to arrange it.

- 2 One week, Pip's mother was not at home from Monday to Thursday. He decided to go to the three restaurants (A, B and C) near his home for dinner. Given that he decided to go to Restaurant A on Monday and go to Restaurant C on Thursday. He did not want to go to the same restaurant for two consecutive days. How many different ways can Pip visit the restaurants? _____

- 3 Candy is going to take piano, dance, and singing classes for the 5 consecutive days. She takes only one class each day and takes different classes for two consecutive days. If she takes piano class on the first day and on the last day, there are _____ different class schedules for Candy in these 5 days.

- 4 Bud has prepared four different types of fish as treats for her cat: salmon, tuna, cod, and mahi-mahi. She only feeds her cat one type of fish per day, and the type of fish is not the same on consecutive days. If she feeds her cat tuna on both Thursday and Sunday, then how many different ways are there for her to feed the cat from Thursday to Sunday? _____



- 5 Judy is Cecilia's best friend in school. Judy also has lunch every school day in the cafeteria, choosing from the 4 lunch combos. She does not have the same combo for two consecutive days. If Judy has Combo A on the first day and has Combo D on the fourth day, how many lunch options does she have for these 4 days?