Lesson Printables

Be a rockstar and only print what you need!

Lesson Information Sheet: 2

Sunlight Zone
Activity: 3

Twilight Zone
Activity: 4

Midnight Zone
Activity: 5

Extras
Recording Log: 6
Optional Counters: 7
Answers: 8

Let's explore making equal groups

Why learn this?

Understanding division as 'making equal groups' helps students conceptually see what happens when a quantity is divided. In this lesson, students will physically explore making groups from different quantities. *Please note, we do not use terms like dividend, divisor, quotient or remainder. These will be explored in depth in future lessons.*

How can I help my students make equal groups?

Make it concrete!
In order for students to conceptually understand division, they need to know that numbers are being split/shared/grouped/divided. The best way for students to understand this, is for them to physically explore dividing objects into equal groups. Students could use blocks, counters, beans, pencils, shoes, pegs, (pretty much anything!) to physically create amounts to divide.

Interpreting division number sentences
A division number sentence can be interpreted two ways. While we don't explicitly go into this during the lesson, it might be helpful for you, as the adult, to see this in action.

- ➔ Let's look at 12 ÷ 3 = 4.
  - ◆ This could be interpreted as starting with 12 blocks. When they are divided between 3 equal groups, there are 4 blocks in each group.
  - ◆ It could also be interpreted as starting with 12 blocks. If they are put in groups of 3, there are 4 equal groups in total.

Exploring equal groups
In this lesson, students will explore making equal groups and then writing a number sentence based on their findings. Students are open to doing this as they see fit. We have modelled drawing circles to indicate how many groups there are and then placing the objects one at a time in the circles. Once all of the objects have been used, students should look at their groups. Do they have the same number of objects in each group? If they say yes, they have divided the objects evenly and could write a division number sentence based of their findings. If the groups have different amounts of objects in them, the objects have not been divided evenly. *Please note, we have not discussed remainders. The goal of this lesson is for students to familiarise themselves with making/noticing/exploring equal groups. Remainders will be discussed in the following lesson.*

- ➔ Let's look at making equal groups from 12 objects. Students can pick how they wish to group objects or they could work in a systematic way. It is up to them how they wish to explore.
  - ◆ Can 12 be split between 4 groups?
    - Draw 4 big circles.
    - Place the 12 objects one at a time in alternating circles.
    - When the objects have run out, look at the groups. Do they have the same amount of objects in each group?
      - Yes, each group has 3 objects. This means 12 ÷ 4 = 3. It can be interpreted as 12 objects divided between 4 groups. This means you get 3 objects in each group.

Let's warm up!

Starter Activity - Concert Conundrum
A concert is happening in a triangular room. On the first row there is 1 chair, on the second row there are 3 chairs and on the third row there are 5 chairs. If you continue this pattern, how many chairs will there be on the 10th row?

To support, students could:
- Be guided to look at how the pattern 'grows'.
  - ➔ How many new chairs are on the second row? How many new chairs are on the third row. What do you notice?

To challenge, students could:
- Identify how many chairs there will be in total if there are 10 rows.

Let's do this!

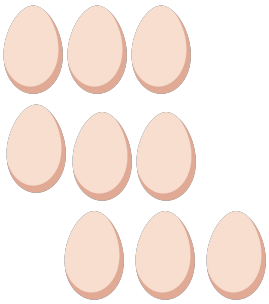
Main Activity - Students are shown pictures or prompts of amounts to explore dividing. Students could get the amount of objects that match each prompt *(note, some number might be too big)* and then explore all the different ways the total can be divided evenly. For example, the first picture might show 8 strawberries. Students should find 8 objects (they can be anything. We just recommend they are the same item, like pencils) and then explore making equal groups. For numbers that might be too big for counting out objects, students could try to apply their times table knowledge to make equal groups. For example, is there a number students can multiply by 4 that will reach 100? Students could test out potential numbers and then make division number sentences based on their findings. For example, 4 x 25 = 100, so 100 ÷ 4 = 25.

To support, students could:
- Work with numbers 20 or less.
- Use the recording log to draw pictures, write number sentences and use sentence stems to show their thinking.

To challenge, students could:
- Write number sentences to match their equal groups.
- Can students find all of the ways the amounts can be shared equally?
- Work with totals up to 100. See Midnight Zone.

Sunlight Zone

1. How many different ways can the items be divided between equal groups?
   ➔ Try writing number sentences to match your findings.

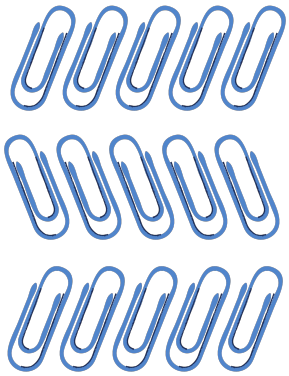


I want to divide 15 bones.

I want to divide 18 pencils.

Twilight Zone

1. How many different ways can the items be divided between equal groups?
   ➔ Try writing number sentences to match your findings.



I want to divide 24 leaves.

I want to divide 32 pumpkins.

I want to divide 50 snowballs.

Midnight Zone

1. How many different ways can the items be divided between equal groups?
   ➔ Try writing number sentences to match your findings.

I want to divide 24 pencils. 	
I want to divide 36 pumpkins. 	
I want to divide 54 snowballs. 	
I want to divide 100 bones. 	

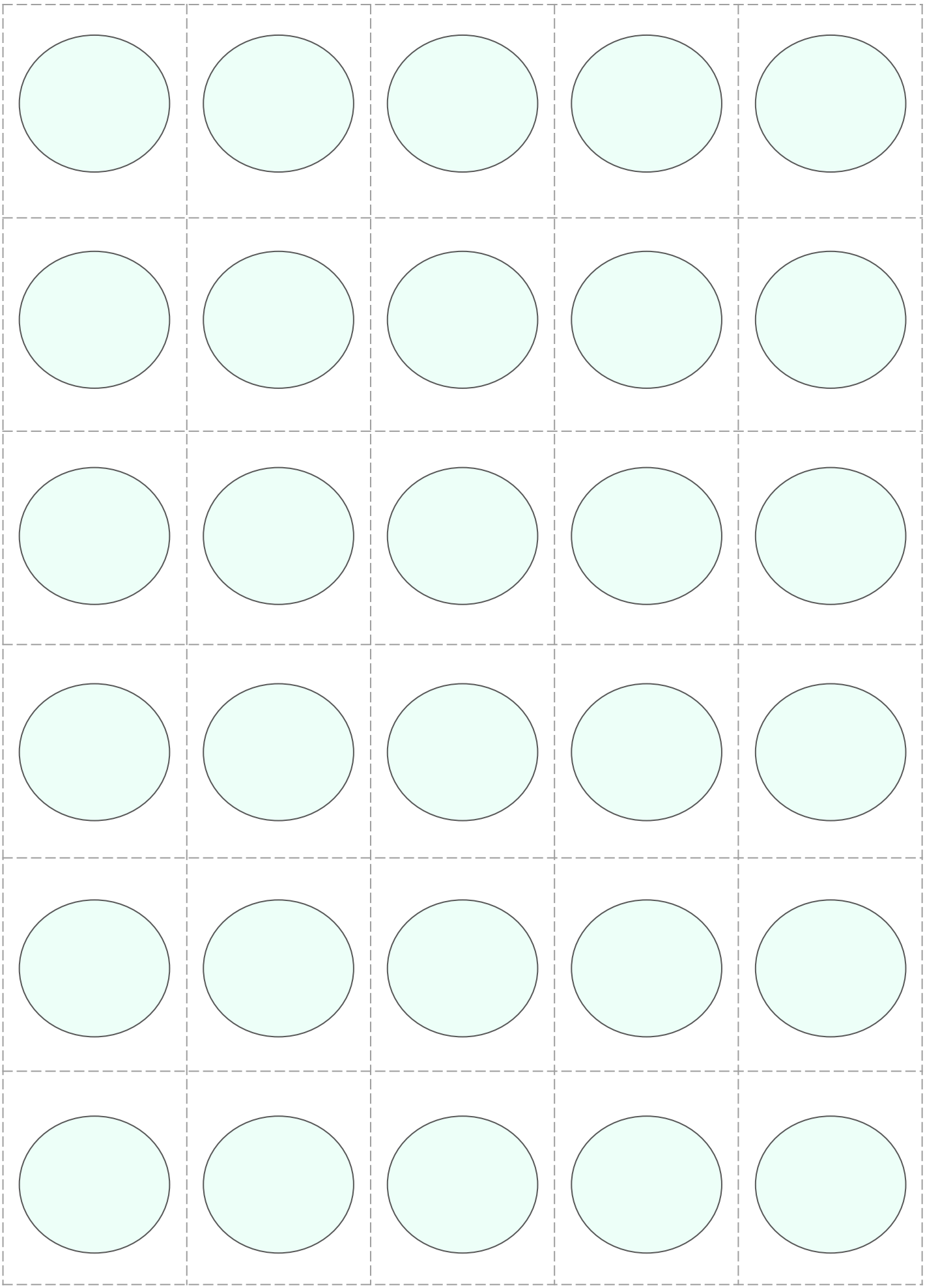
Recording Log

Thinking Space

Number sentences that match:

I shared _____ between _____ groups. There are _____ in each group.	I shared _____ between _____ groups. There are _____ in each group.

Optional Counters



Answers

Sunlight Answers	
Strawberries	8 ÷ 8 = 1 8 ÷ 1 = 8 8 ÷ 2 = 4 8 ÷ 4 = 2
Eggs	9 ÷ 1 = 9 9 ÷ 9 = 1 9 ÷ 3 = 3
Bones	15 ÷ 1 = 15 15 ÷ 15 = 1 15 ÷ 3 = 5 15 ÷ 5 = 3
Pencils	18 ÷ 1 = 18 18 ÷ 18 = 1 18 ÷ 2 = 9 18 ÷ 9 = 2 18 ÷ 3 = 6 18 ÷ 6 = 3

Twilight Answers	
Paperclips	15 ÷ 1 = 15 15 ÷ 15 = 1 15 ÷ 3 = 5 15 ÷ 5 = 3
Leaves	24 ÷ 1 = 24 24 ÷ 24 = 1 24 ÷ 2 = 12 24 ÷ 12 = 2 24 ÷ 3 = 8 24 ÷ 8 = 3 24 ÷ 4 = 6 24 ÷ 6 = 4
Pumpkins	32 ÷ 1 = 32 32 ÷ 32 = 1 32 ÷ 2 = 16 32 ÷ 16 = 2 32 ÷ 4 = 8 32 ÷ 8 = 4
Cat	50 ÷ 1 = 50 50 ÷ 50 = 1 50 ÷ 2 = 25 50 ÷ 25 = 2 50 ÷ 10 = 5 50 ÷ 5 = 10

Midnight Answers			
Pencils	Pumpkins	Snowballs	Bones
24 ÷ 1 = 24 24 ÷ 24 = 1 24 ÷ 2 = 12 24 ÷ 12 = 2 24 ÷ 3 = 8 24 ÷ 8 = 3 24 ÷ 4 = 6 24 ÷ 6 = 4	36 ÷ 1 = 36 36 ÷ 36 = 1 36 ÷ 2 = 18 36 ÷ 18 = 2 36 ÷ 4 = 9 36 ÷ 9 = 4 36 ÷ 3 = 12 36 ÷ 12 = 3 36 ÷ 6 = 6	54 ÷ 1 = 54 54 ÷ 54 = 1 54 ÷ 2 = 27 54 ÷ 27 = 2 54 ÷ 3 = 18 54 ÷ 18 = 3 54 ÷ 6 = 9 54 ÷ 9 = 6	100 ÷ 1 = 100 100 ÷ 100 = 1 100 ÷ 2 = 50 100 ÷ 50 = 2 100 ÷ 4 = 25 100 ÷ 25 = 4 100 ÷ 10 = 10 100 ÷ 5 = 20 100 ÷ 20 = 5