Lesson Printables

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Lesson Information Sheet: 2

Sunlight Zone
Activity: 3

Twilight Zone
Activity: 4

Midnight Zone
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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 conceptual 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 the 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 8 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 8 be split between 2 groups?
    - Draw 2 big circles.
    - Place the 8 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 4 objects. This means 8 ÷ 2 = 4. It can be interpreted as 8 objects divided between 2 groups. This means you get 4 objects in each group.

Let's warm up!

Starter Activity - Match Up
What numbers are missing from the number sentences? Match the shoes to the jersey that matches the missing numbers in each number sentence.

To support, students could:
- Be guided to reframe the number sentences:
  - ➔ If 7 + ? = 17, what subtraction number sentence could you use to get the answer?
  - ➔ What if you counted on from 7 to get to 17?

To challenge, students could:
- Write their own number sentences using any operation so that the answers match each jersey number.

Let's do this!

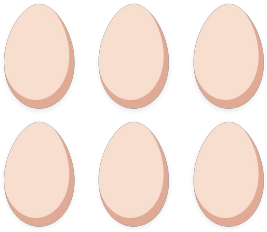
Main Activity - Students are shown pictures or prompts of amounts to explore dividing. Students should get the amount of objects that match each prompt and then explore all the different ways the total can be divided evenly. For example, the first picture might show 6 tennis balls. Students should find 6 objects (they can be anything, we just recommend they are the same item, like pencils) and then explore making equal groups.

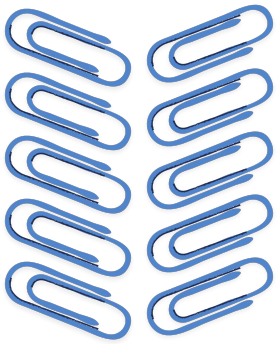
To support, students could:
- Work with numbers 12 or less.
- Use the recording log to draw pictures, write number sentences and use sentence stems to show their thinking.

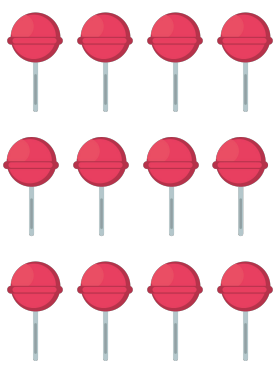
To challenge, students could:
- Write number sentences to match their equal groups.
- Can students find all of the ways the amounts can be shared equally?
- Work with totals up to 36. See Midnight Zone.

Sunlight Zone

1. How many different ways can the items be divided between equal groups?
   ➔ Use your own objects to practice making equal groups.

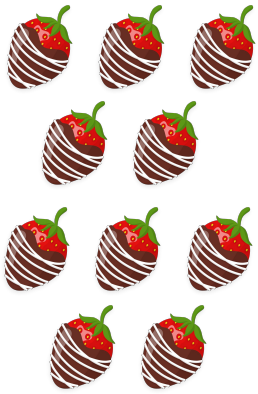


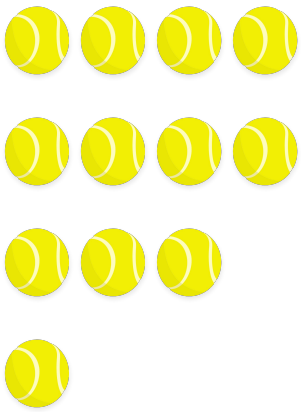


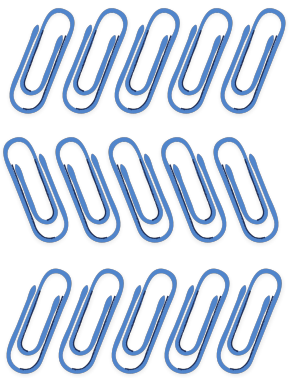


Twilight Zone

1. How many different ways can the items be divided between equal groups?
   ➔ Use your own objects to practice making equal groups.



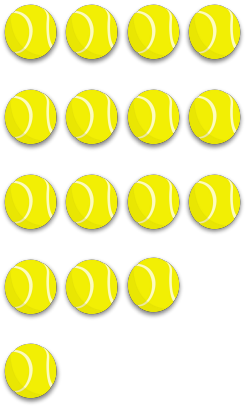




I have 18 toy mice.

Midnight Zone

1. How many different ways can the items be divided between equal groups?
   ➔ Use your own objects to practice making equal groups.



I have 24 eggs.

I have 32 toy mice.

I have 36 bones.

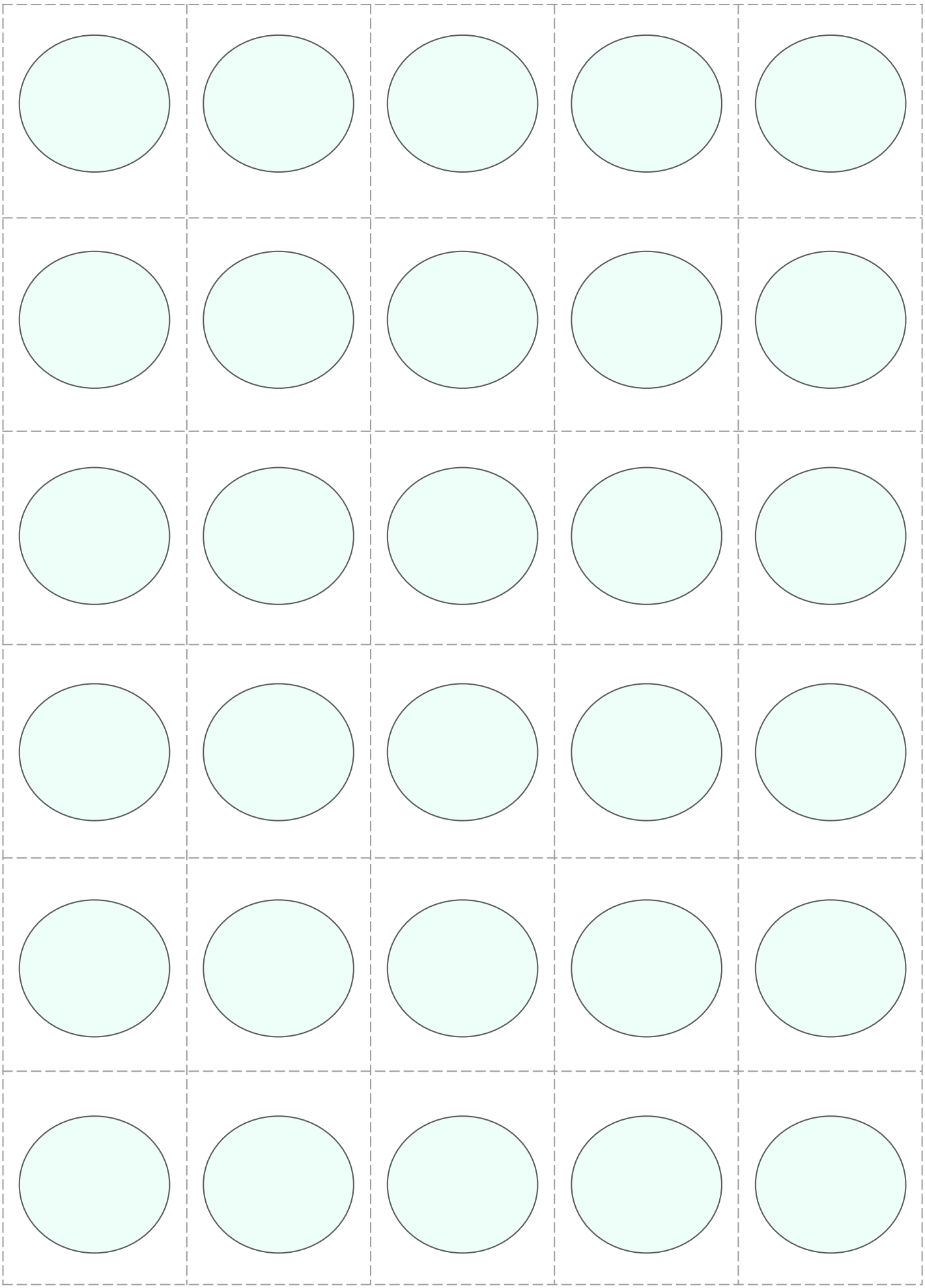
Recording Log

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	
Eggs	6 ÷ 6 = 1 6 ÷ 1 = 6 6 ÷ 2 = 3 6 ÷ 3 = 2
Strawberries	9 ÷ 1 = 9 9 ÷ 9 = 1
Paperclips	10 ÷ 10 = 1 10 ÷ 1 = 10 10 ÷ 2 = 5 10 ÷ 5 = 2
Lollipops	12 ÷ 12 = 1 12 ÷ 1 = 12 12 ÷ 2 = 6 12 ÷ 6 = 3 12 ÷ 4 = 3 12 ÷ 3 = 4

Twilight Answers	
Strawberries	10 ÷ 10 = 1 10 ÷ 1 = 10 10 ÷ 2 = 5 10 ÷ 5 = 2
Tennisballs	12 ÷ 12 = 1 12 ÷ 1 = 12 12 ÷ 2 = 6 12 ÷ 6 = 3 12 ÷ 4 = 3 12 ÷ 3 = 4
Paperclips	15 ÷ 1 = 15 15 ÷ 15 = 1 15 ÷ 3 = 5 15 ÷ 5 = 3
Cat	18 ÷ 1 = 18 18 ÷ 18 = 1 18 ÷ 2 = 9 18 ÷ 9 = 2 18 ÷ 3 = 6 18 ÷ 6 = 3

Midnight Answers			
Strawberries	Eggs	Mice	Bones
16 ÷ 16 = 1 16 ÷ 1 = 16 16 ÷ 2 = 8 16 ÷ 8 = 2 16 ÷ 4 = 4	24 ÷ 1 = 24 24 ÷ 24 = 1 24 ÷ 2 = 12 24 ÷ 12 = 2 24 ÷ 3 = 8 24 ÷ 8 = 3 24 ÷ 4 = 6 24 ÷ 6 = 4	32 ÷ 1 = 32 32 ÷ 32 = 1 32 ÷ 2 = 16 32 ÷ 16 = 2 32 ÷ 4 = 8 32 ÷ 8 = 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