



The yellow rocket has a mass of 3 sticks.

The green rocket has a mass of 7 sticks.

The yellow rocket is lighter than the green rocket.

The green rocket is heavier than the yellow rocket.



The alien is heavier than the astronaut. False



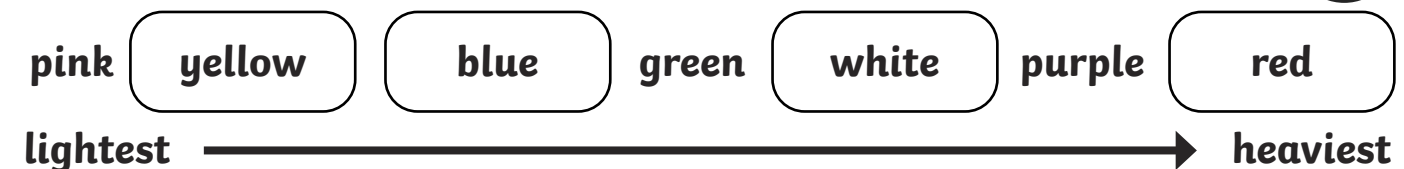
The rocket is the lightest. True

The alien is lighter than the robot. True



The flying saucer is lighter than the astronaut and the robot.

The flying saucer is heavier than the rocket and the alien.



The mass of the green rocket could be 5, 6 or 7 sticks.

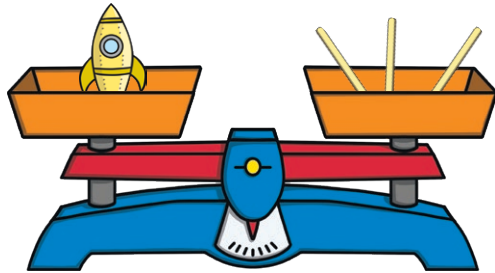
The green rocket is lighter than the white, purple and red rockets.

The green rocket is heavier than the pink, yellow and blue rockets.

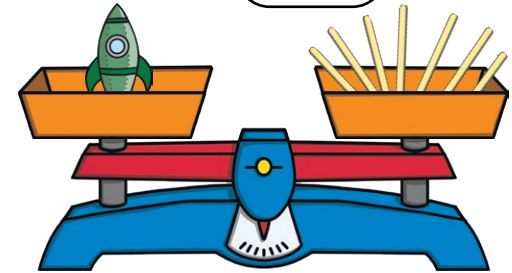
Compare Mass



The yellow rocket has a mass of sticks.



The green rocket has a mass of sticks.



Useful Words

heavier

lighter

The yellow rocket is than the green rocket.

The green rocket is than the yellow rocket.

	red	blue	white
Toy			
Sticks	4	6	2

Order the toy rockets from the heaviest to the lightest.

heaviest → lightest

Use cubes to measure the mass of 4 real toys.

Order them from the lightest to the heaviest.

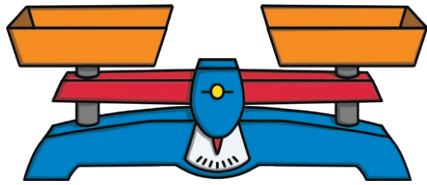
lightest → heaviest





Compare the mass of 2 of the toys.

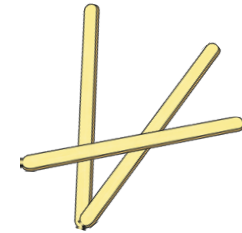
The is heavier than the .

The is lighter than the .

Compare Mass



	astronaut	rocket	alien	robot
Toy				
Sticks	7	3	5	9



True or false?

The alien is heavier than the astronaut.

The rocket is the lightest.

The alien is lighter than the robot.

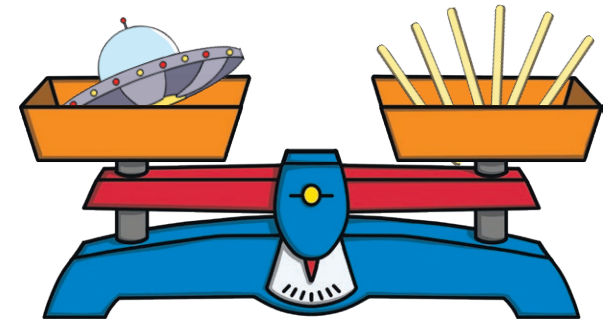
Order the toys from the lightest to the heaviest.

lightest



heaviest

Can you add the flying saucer?



The flying saucer is lighter than the and the .

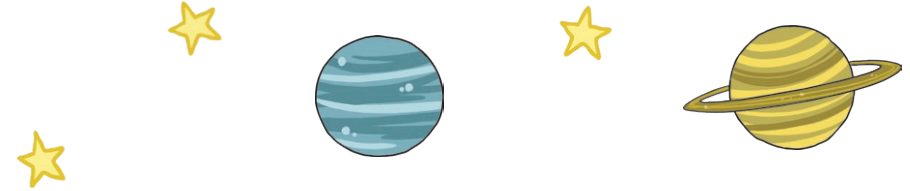
The flying saucer is heavier than the and the .

Compare Mass



	blue	red	yellow	white
Toy				
Sticks	4	10	2	8

Order the rockets from the lightest to the heaviest.

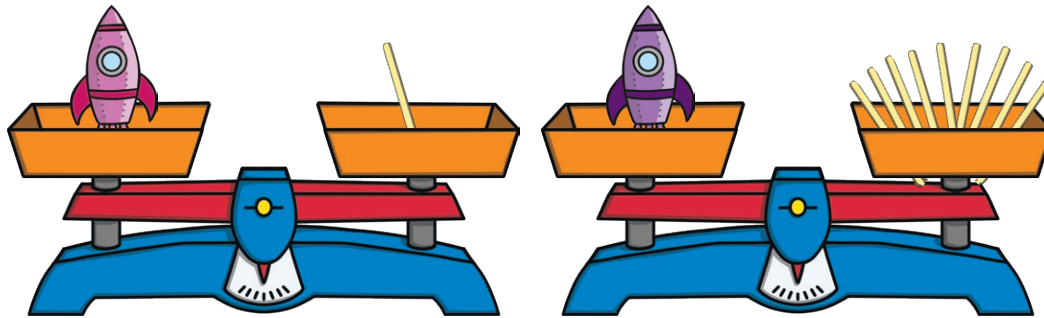




lightest



heaviest



Where could the pink and purple rockets go?

What could the mass of the green rocket be?

The green rocket is lighter than the , and rockets.

The green rocket is heavier than the , and rockets.

Compare Mass

Adult Guidance with Question Prompts



Children are shown two balance scales holding toys balanced with non-standard units. They use the terms 'heavier' and 'lighter' to compare and describe the mass. Children go on to check a table showing the number of non-standard units used to measure the mass of three toys. They order the toys from the heaviest to the lightest. Children then choose four objects and measure their mass with cubes and balance scales. They order the toys from lightest to heaviest, then complete sentences to compare the mass of two of the toys using the terms 'heavier' and 'lighter'.

For the last part of this challenge, children will need balance scales, cubes and a selection of toys (no heavier than the mass of ten cubes).

How many lolly sticks have the same mass as the yellow rocket?

How many lolly sticks have the same mass as the green rocket?

Which words would you choose to finish the sentences? Can you explain why?

Can you order the rockets from the heaviest to the lightest?

How do you know?

Pick four objects and put them in order from the lightest to the heaviest without using the balance scales.

Can you show me how to use cubes to measure their mass?

What does it mean if the side with the object moves up higher than the side with the cubes? Is it lighter or heavier than them?

Is this the order that you expected?

Compare Mass

Adult Guidance with Question Prompts



Children understand how non-standard units and balance scales can be used to find the mass of objects. A set of toys are shown in a table with their mass measured in sticks. They use this to determine if statements about the mass of the toys are true or false. Children explain their reasoning using the terms 'heavier', 'lighter' and 'equal to'. They then order the toys from lightest to heaviest and work out where a new toy could be placed in the sequence. Children then complete statements comparing the mass of the new toy to the other toys.

What does the table tell us?

Can you show me how to use it to find the mass of the rocket?

What non-standard units have been used to measure their mass?

Read one statement at a time.

Is it true or false? Can you prove it?

Can you order the toys from the lightest to the heaviest? How do you know?

Where could the flying saucer go? Can you explain why?

Draw an arrow to show where you would put it.

Read the sentences with the missing words carefully.

What are they telling us to do?

Is the first sentence asking us to name the toys that are lighter than the flying saucer? Why or why not?

Is the second sentence asking us to name the toys that are heavier than the flying saucer? Why or why not?

Extra challenge

Find four real toys and measure their mass with non-standard units. Play 'true or false?' with a friend. Take turns to say a statement about the mass of a toy and to explain how you know if it is true or false.

Compare Mass

Adult Guidance with Question Prompts



Children understand how non-standard units and balance scales can be used to find the mass of objects. A set of toys are shown in a table with their mass measured in sticks. They use this information to order the toys from the lightest to heaviest. Children apply their problem-solving skills to work out the mass of a new toy that has been placed in the sequence. There is more than one possible answer. They then complete statements comparing the mass of the new toy with the other toys. Children also investigate where other new toys could be placed in the sequence.

What does the table tell us?

Can you show me how to use it to find the mass of the red rocket?

What non-standard units have been used to measure their mass?

Can you order the toys from the lightest to the heaviest? How do you know?

What could the mass of the green rocket be?

Is there more than one possible answer? Can you explain why?

Where could the pink and purple rockets go? How do you know? Draw an arrow to show where you would put them.

What are the sentences with the missing words telling us to do?

Is the first sentence asking us to name the rockets that are lighter than the green rocket? Why or why not?

Is the second sentence asking us to name the rockets that are heavier than the green rocket? Why or why not?

Extra challenge

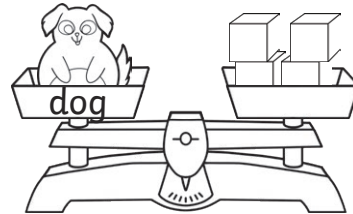
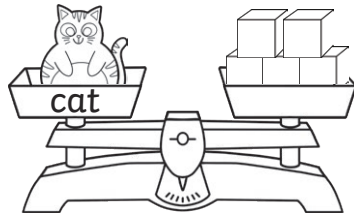
Find four toys and measure their mass with non-standard units. Put them in order of their mass, either from the heaviest to the lightest or the lightest to the heaviest. Can you find another object to go in the middle of the sequence? What can you tell me about the mass you are looking for?

Comparing Mass

To compare mass.



Compare the mass of the toys.



The is heavier than the .

The is lighter than the .

Order the toys from the lightest to the heaviest.

rabbit  7 cubes

bear  3 cubes

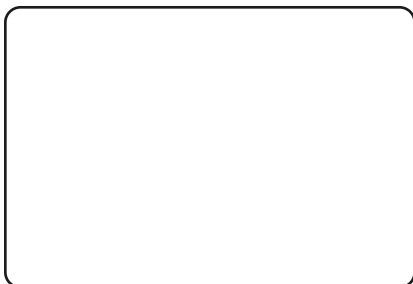
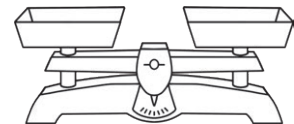
monkey  5 cubes



lightest  heaviest

Use cubes to measure the mass of 3 real toys.

Order the toys from the heaviest to the lightest.



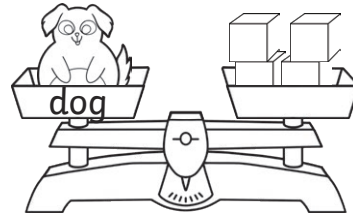
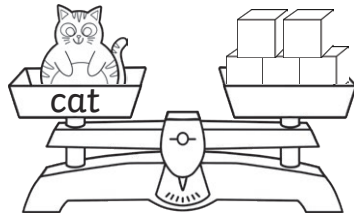
heaviest  lightest

Comparing Mass Answers

To compare mass.



Compare the mass of the toys.



The **cat** is heavier than the **dog**.

The **dog** is lighter than the **cat**.

Order the toys from the lightest to the heaviest.

rabbit 7 cubes



bear 3 cubes



monkey 5 cubes



bear

monkey

rabbit

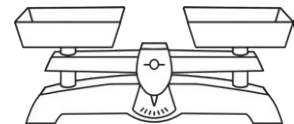
lightest



heaviest

Use cubes to measure the mass of 3 real toys.

Order the toys from the heaviest to the lightest.



lightest




heaviest

Comparing Mass


To compare mass.



Compare the mass of the toys.

cat  7 cubes




hamster  3 cubes

dog  5 cubes

The dog is heavier than the .

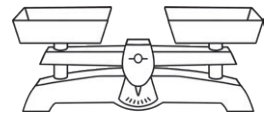
The dog is lighter than the .

Order the toys from the lightest to the heaviest.

Toy	Cubes
 bear	8
 rabbit	6
 monkey	4

lightest → heaviest

Use cubes to measure the mass of 4 real toys.
Order the toys from the lightest to the heaviest.



lightest → heaviest

Compare the mass of 2 of the toys.


The is than the .

Comparing Mass Answers


To compare mass.



Compare the mass of the toys.

cat  7 cubes




hamster  3 cubes

dog  5 cubes

The dog is heavier than the **hamster**.

The dog is lighter than the **cat**.

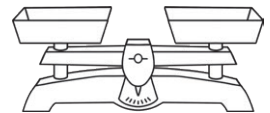
Order the toys from the lightest to the heaviest.


Toy	Cubes
 bear	8
 rabbit	6
 monkey	4

monkey **rabbit** **bear**

lightest  heaviest

Use cubes to measure the mass of 4 real toys.
Order the toys from the lightest to the heaviest.



lightest  heaviest

Compare the mass of 2 of the toys.

The is than the .

Comparing Mass

To compare mass.

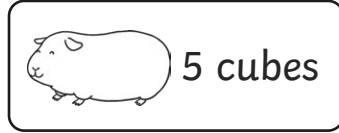


Compare the mass of the toys.



7 cubes

cat



5 cubes

guinea pig



9 cubes

dog







3 cubes

hamster

The guinea pig is heavier than the
and lighter than the and .

Order the toys from the lightest to the heaviest.

Toy	 rabbit	 monkey	 bear	 owl
Cubes	8	2	6	4

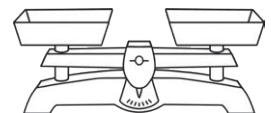
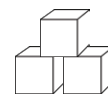
lightest

heaviest



Use cubes to measure the mass of 4 real toys.

Order the toys from the heaviest to the lightest.



heaviest

lightest







Pick one of the toys and write facts about its mass.

Comparing Mass Answers

To compare mass.







Compare the mass of the toys.

 7 cubes	 5 cubes	 9 cubes	 3 cubes
cat	guinea pig	dog	hamster

The guinea pig is heavier than the **hamster**
and lighter than the **cat** and **dog**.

Order the toys from the lightest to the heaviest.

Toy	 rabbit	 monkey	 bear	 owl
Cubes	8	2	6	4

monkey	owl	bear	rabbit
lightest	→		heaviest

Use cubes to measure the mass of 4 real toys.
Order the toys from the heaviest to the lightest.



<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
heaviest	→		lightest

Pick one of the toys and write facts about its mass.