
ALL THINGS
FALL
DOWN

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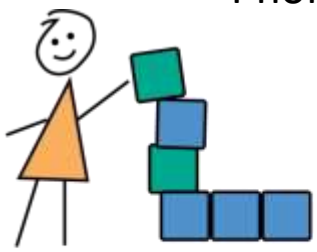

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One day Alice and her friend Luke were at the park. Alice and Luke had one baseball and one bouncy ball. They threw them both into the air and they fell to the ground at the same time!

"What goes up must come down!" laughed Alice. "If you let go of your ball, it will fall to the ground!"

“How come they both fell down at the same time?” asked Luke. “I thought that heavier objects fall faster than lighter objects. My baseball is heavier so I thought it would fall faster.”

“Let’s find out!” said Alice.

They grabbed their buckets and headed towards the jungle gym.

Luke and Alice climbed to the top of the jungle gym.

"Let's see what happens if we drop two things at the exact same time." Alice said.

"Our buckets are the same size. But my bucket is heavy and full of toys and your bucket's empty, so it's lighter. I think my bucket's going to reach the ground first," Luke said.

"No way!" Alice exclaimed.

Both Alice and Luke let their buckets go. “Look, both buckets reached the ground at the same time.” said Alice.

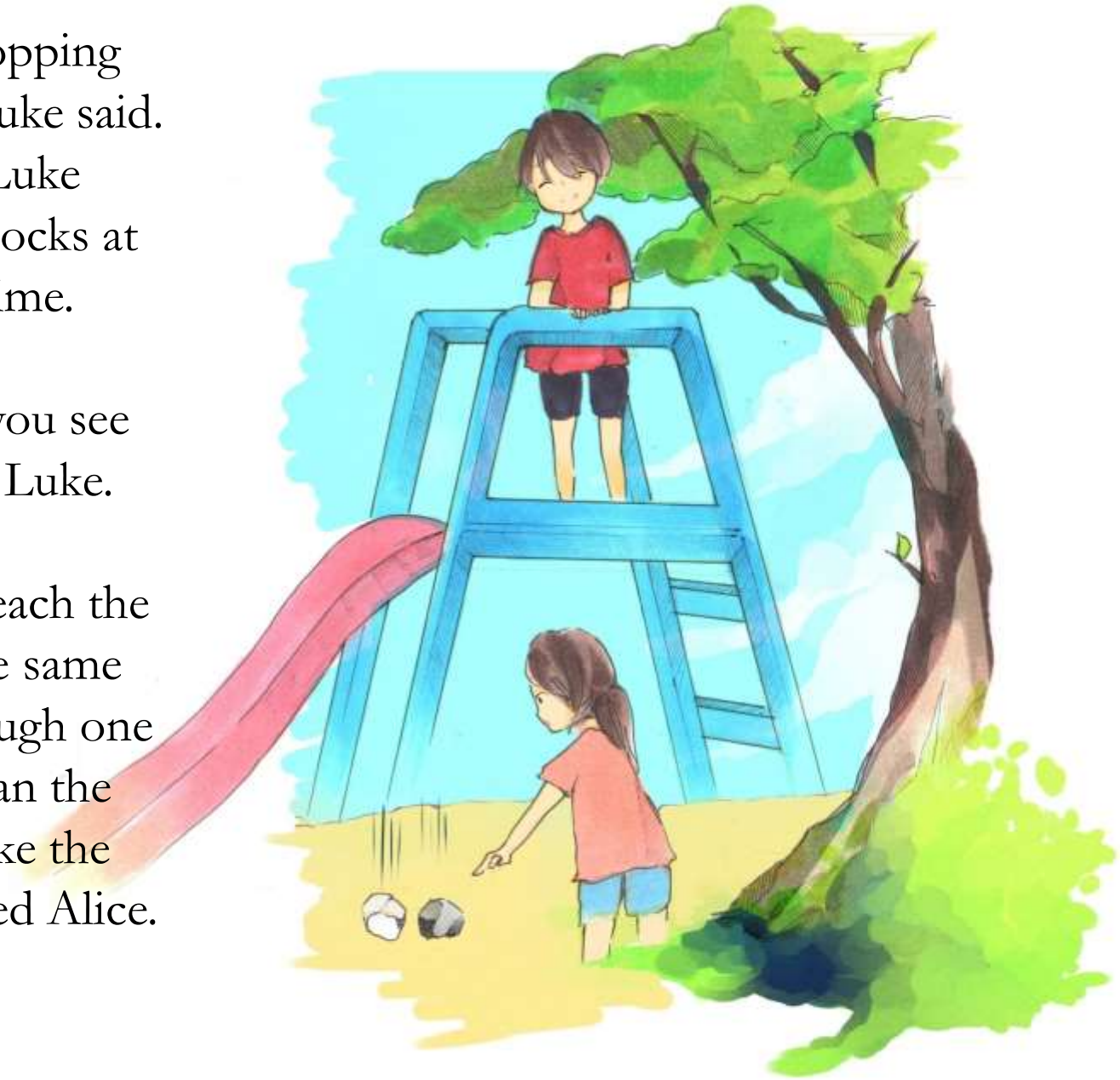
Luke found two rocks by the playground. "Look!" he said to Alice. "Both rocks are almost the same size, but one rock weighs more than the other rock."

"There are many different types of rocks in the world, and different types of rocks have different weight." Alice explained.

"Let's try dropping these rocks," Luke said. Alice and Luke dropped the rocks at the same time.

"Wow! Did you see that?" asked Luke.

"Both rocks reach the ground at the same time, even though one is heavier than the other. Just like the buckets." replied Alice.



“I thought heavier things reach the ground before light ones, but it doesn’t look like that’s true!” said Luke.

“Let’s try one more time,” exclaimed Alice. “Give me your shoe please,” she said as she took off her shoe. Alice filled up her shoe with sand and left Luke’s shoe empty. “Now, my blue shoe is heavier than your red one.”

“Even though our shoes are not the exactly the same size, they are similar in shape. I think they will still fall at the same time.” said Alice.
“Let’s find out!” Luke said.

“We can drop them from the seesaw!" Luke shouted.

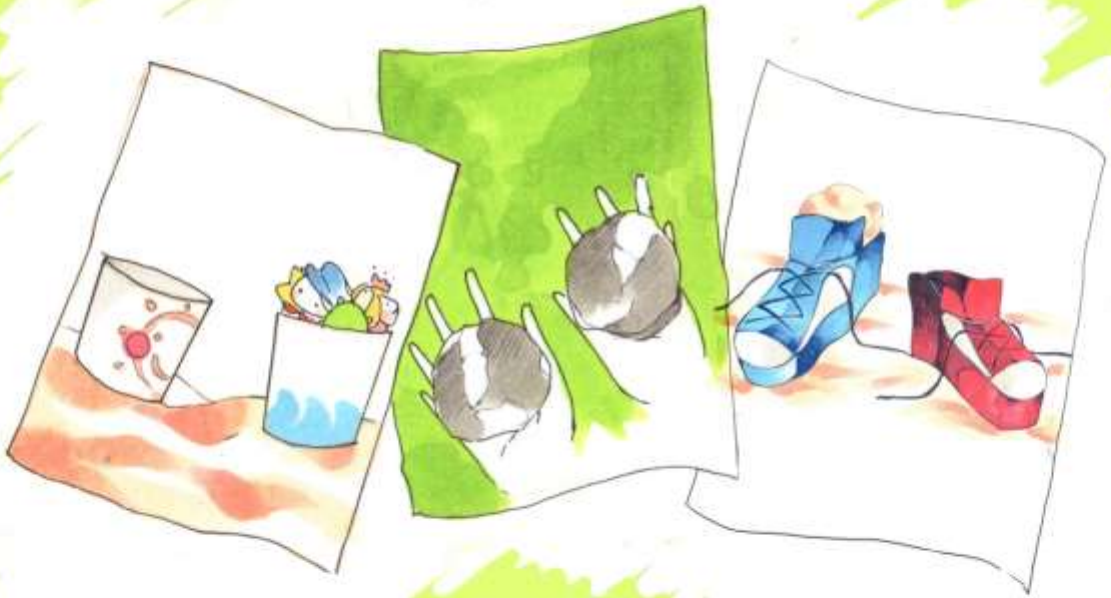
Alice and Luke sat on the seesaw. When Alice was at the top, she held her arms out and let the shoes go at the exact same time!

Just like the buckets and rocks, both shoes reached the ground at the same time even though one shoe was heavier than the other.

“What did we learn today?” asked Luke.

“Objects that have different weights and are similar in size will fall at the same speed.” replied Alice.

“So how fast objects fall has nothing to do with how heavy or light things are,” said Luke. “If two things are similar in size they will fall at the same time.”



"Right," Alice answered. "Gravity is the force that makes objects fall to the ground. Gravity affects things the same way. When objects that are similar in size are dropped together, they reach the ground at the same time, no matter what they weigh."

Suddenly, Alice's ice cream fell! "Everything falls down," Luke laughed.

Suggested Discussion Questions

1. The book had three different examples of objects that were dropped together? What were they? Did they fall at the same time or different times?

2. Can you remember why the objects all fell at the same time?

3. In the last page of the book, it talked about force. What does force mean?

4. What is the force that causes all objects to fall?

5. Have you heard of gravity before? Where did you hear of it?

6. Why do heavy objects NOT fall faster than light ones?

Suggested Activity #1: Fill and Drop

Materials: Different pairs of containers the same size; heavy objects and light objects

- Ask children to fill two containers with different objects (e.g. one container with light objects and another with heavy objects).
- Have children hold the containers to feel the weight difference .
- Drop the containers at the same time. Discuss your findings!

Suggested Activity #2: Slow Motion Drop

Materials: Object pairs of different weights, prediction sheet, camera, computer

- Give children the activity sheets.
- Show them objects and ask them to circle predictions about how they will fall
- Drop the objects and Film the drop.
- Play the drop on a computer at ¼ time speed. Discuss your findings!