

DO TRAINS PUSH OR PULL?

LEVEL

The Early Years, Level A-D (towards foundation),
Foundation – Level 2

ACTIVITY DESCRIPTION

Students explore the concept of force, motion, push and pull. They learn about different pushes and pulls and how they are created with a range of materials and equipment. They discover if trains push or pull and use new scientific language to describe their findings.

THEME

- Force/Motion
- Push/Pull

MATERIALS REQUIRED

- Plastic tubs for toys
- Range of toys/items to demonstrate push and pull concept

INSTRUCTIONS

As a whole class activity discuss the definitions and provide examples of the following concepts.

WHAT IS A FORCE?

A force is a push, or a pull, needed to start an object moving, or to make things change their motion. When a force is applied to an object the following things can happen:

- A stationary object moves
- The speed of an object increases
- An object changes direction
- A moving object stops moving

WHAT IS A PUSH?

A push is a force moving something away from you.

WHAT IS A PULL?

A pull is a force moving something towards you.

PUSH OR PULL?

Using the following objects, demonstrate to the students if the force required is a push or a pull.

1. Closing the classroom door? Answer: The force is a push.
2. Moving a Toy Train along a track?
Answer: The force could be both a push or a pull.
3. Wind-up toy car? Answer: The force is a pull
4. Opening a draw in the classroom?
Answer: The force is a pull.
5. Rolling a ball? Answer: The force is a push.

Ask students to form small working groups. Hand out a bucket of items to each group. Students find a personal space to explore with their toy. They push and pull their toys, changing direction, applying different amounts of force. Give students directions to follow that involve the key vocabulary and related language. Have students identify a push or a pull when their toys are moved in different directions.

Once each group member has had a turn, rotate the buckets around to each group.

Hand out the worksheets to each student. Students complete the worksheet individually and submit for assessment.

Correct answers are discussed as a whole group.

✓ **SUGGESTIONS FOR ASSESSMENT**

Successful completion of small group activity.
Participation in class and small group discussions.
Use of key vocabulary. Identification of pushes and pulls in different environments. Successful completion of the worksheet.

🔍 **BACKGROUND INFORMATION**

When you see a locomotive at the front of a train it is considered a pull- train. It is pulling the carriages along the track. Puffing Billy is considered a pull train. The pulling engine is more efficient, however both push and pull trains exist in real life.

▶ **CURRICULUM LINKS**

DESIGN AND TECHNOLOGIES

Explore how technologies use forces to create movement in designed solutions ([VCDSTC014](#))












SCIENCE

The way objects move depends on a variety of factors including their size and shape: a push or a pull affects how an object moves or changes shape ([VCSSU048](#))

Name: _____

Date: _____

✓ **TICK WHICH FORCE IS BEING USED IN EACH PICTURE AND DRAW ARROWS TO SHOW THE DIRECTION OF THE FORCE**

<p>PUFFING BILLY ON THE TRACK</p>  <p><input type="checkbox"/> Push <input type="checkbox"/> Pull <input type="checkbox"/> Both</p>	<p>TOY CAR</p>  <p><input type="checkbox"/> Push <input type="checkbox"/> Pull <input type="checkbox"/> Both</p>	<p>A HORSE DRAWN CART</p>  <p><input type="checkbox"/> Push <input type="checkbox"/> Pull <input type="checkbox"/> Both</p>
<p>CLASSROOM DOOR</p>  <p><input type="checkbox"/> Push <input type="checkbox"/> Pull <input type="checkbox"/> Both</p>	<p>KICKING A BALL</p>  <p><input type="checkbox"/> Push <input type="checkbox"/> Pull <input type="checkbox"/> Both</p>	<p>CARRIAGE ON THE TRAIN</p>  <p><input type="checkbox"/> Push <input type="checkbox"/> Pull <input type="checkbox"/> Both</p>
<p>KIDS ON A SWING</p>  <p><input type="checkbox"/> Push <input type="checkbox"/> Pull <input type="checkbox"/> Both</p>	<p>CLOSING A LOCK</p>  <p><input type="checkbox"/> Push <input type="checkbox"/> Pull <input type="checkbox"/> Both</p>	<p>TIGHTEN BOLTS ON A WHEEL</p>  <p><input type="checkbox"/> Push <input type="checkbox"/> Pull <input type="checkbox"/> Both</p>
<p>PICKING FLOWERS</p>  <p><input type="checkbox"/> Push <input type="checkbox"/> Pull <input type="checkbox"/> Both</p>	<p>ROWING IN A BOAT</p>  <p><input type="checkbox"/> Push <input type="checkbox"/> Pull <input type="checkbox"/> Both</p>	<p>HAMMERING A NAIL</p>  <p><input type="checkbox"/> Push <input type="checkbox"/> Pull <input type="checkbox"/> Both</p>

ANSWER THE FOLLOWING QUESTION

Do you think Puffing Billy is a push or a pull train?
