

FORCE & MOTION A SCIENCE UNIT

Teach young learners all about force and motion!



scroll
to take a
peek
inside

KINDER 292 PAGES

Here is what is included:

- ✔ Lesson plans
- ✔ PowerPoints and printable posters
- ✔ Engaging worksheets and emergent readers
- ✔ How things move and push and pull activities
- ✔ Gravity, friction, and ramps activities
- ✔ Hands-on experiments and sorts
- ✔ Craft, hats, and writing center
...and SO much more!

Here is a Sneak Peak:

GRAVITY

The invisible force that pulls objects toward each other.



FRICTION

A force that slows down motion when an object rubs against another.



FORCE

The strength or energy that moves an object.



The Way Things Move



RAMP EXPERIMENT

Build it! How far did it go?

_____ cubes

_____ cubes

_____ cubes

_____ cubes

_____ cubes

_____ cubes

_____ cubes

_____ cubes

_____ cubes

_____ cubes

_____ cubes

_____ cubes

_____ cubes

_____ cubes

_____ cubes

_____ cubes

_____ cubes

_____ cubes

_____ cubes

_____ cubes

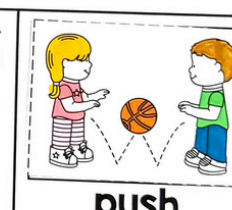
_____ cubes

_____ cubes

_____ cubes

_____ cubes

PUSHES AND PULLS



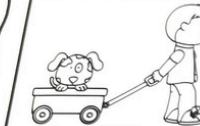
push

How Things Move



PUSH OR PULL?

Write push or pull under each picture.



pull



push



pull



push



push



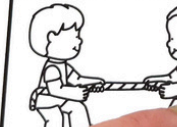
pull



pull

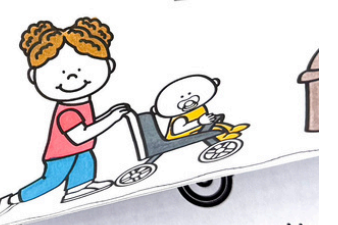


push



pull

Pushes Pulls



You can pull

Engage your students in hands-on learning and exploration all about force and motion!

Take a Closer Look:

THE WAY THINGS MOVE



Force is the strength or push/pull that moves an object.



HOW THINGS MOVE ACTIVITY

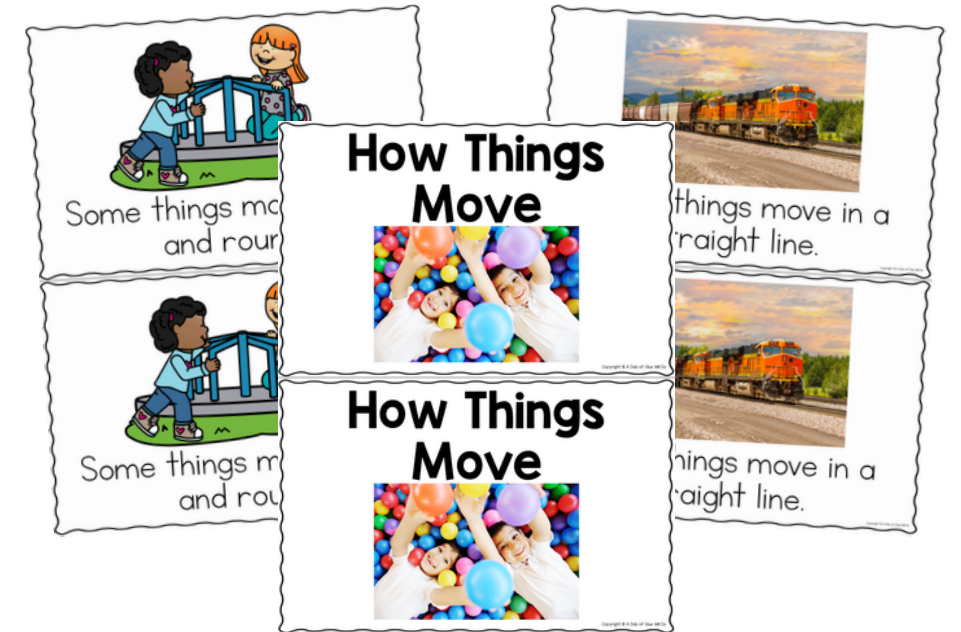
Help students understand the different way objects can move.

SUPPLIES

- Various objects (ball, marker, toy car, domino, bouncy ball, marble, water bottle, pinwheel, spinning top, pinecone, cube, etc.)
- Optional: How Things Move worksheet, Flip book, or hat

DIRECTIONS

- 1) Show students the objects you've gathered. Demonstrate moving one or two of the objects.
- 2) Give students the opportunity to move or attempt to move the objects across and around the desk or floor.
- 3) Discuss how each object moves in different ways. Describe/name the different ways (around and around, up and down, fast, slow, etc.)
- 4) Optional: Students can complete the How Things Move worksheet, Flip book, or hat.

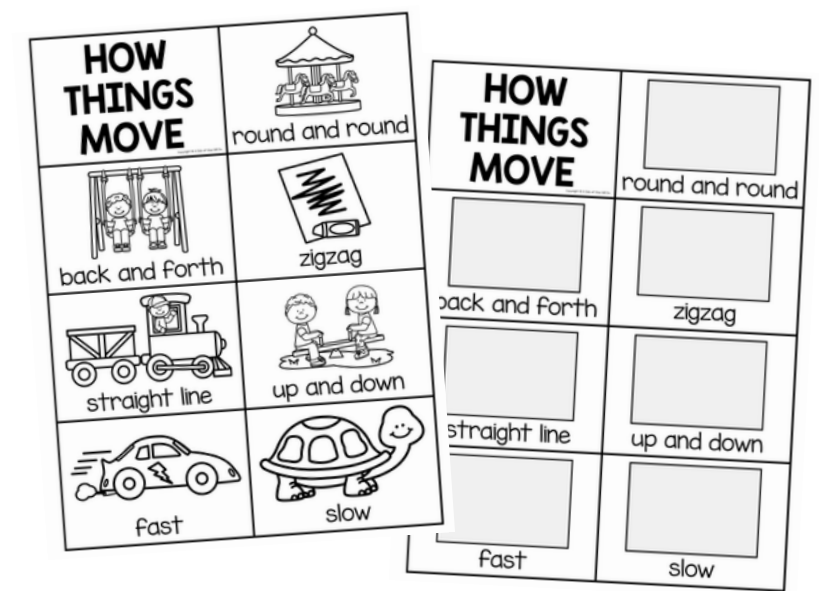
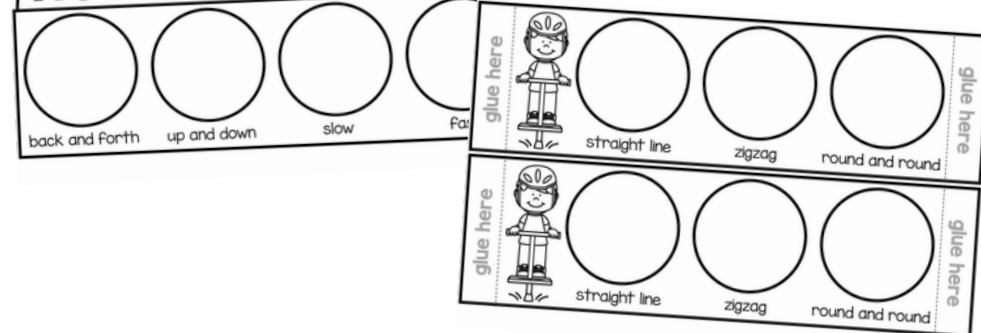


how things move powerpoint

how things move activity

how things move reader

I know all about HOW THINGS MOVE!



how things move hat

how things move flip book

how things move mini book

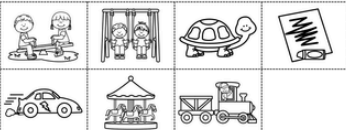
Take a Closer Look:

Name: _____

HOW THINGS MOVE

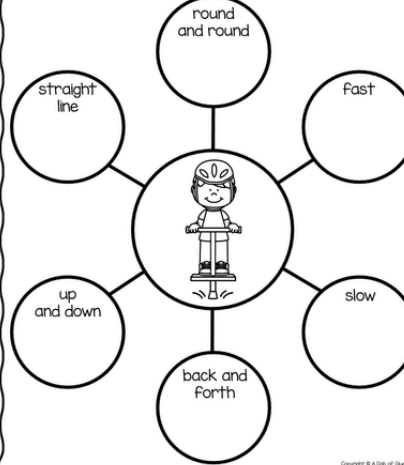
Cut and paste the pictures for each group.

fast	slow	zigzag
round and round	straight line	
up and down	back and forth	



Name: _____

HOW THINGS MOVE



PUSHES AND PULLS



An object is at rest until a force acts on it.



how things move cut & paste

how things move circle map

push and pull powerpoint

PUSHES

PULLS



PULLS

Name: _____

PUSH OR PULL ACTIVITY

Complete this fun activity with students to help them explore pushes and pulls.


SUPPLIES

- Clipboards
- Provided push or pull t-chart
- Optional: Push or Pull worksheet or hat


DIRECTIONS

- 1) Give each student a clipboard and the provided t-chart.
- 2) Go For a walk through the school and search for objects that move by either a push or pull.
- 3) Students can write or draw the objects in the push or pull column on their paper.
- 4) After returning to the classroom, students can show what they've learned by completing the worksheet or hat.


PUSH OR PULL HUNT	
PUSH	PULL




You can pull a rope.



You can push a cart.



You can pull a rope.



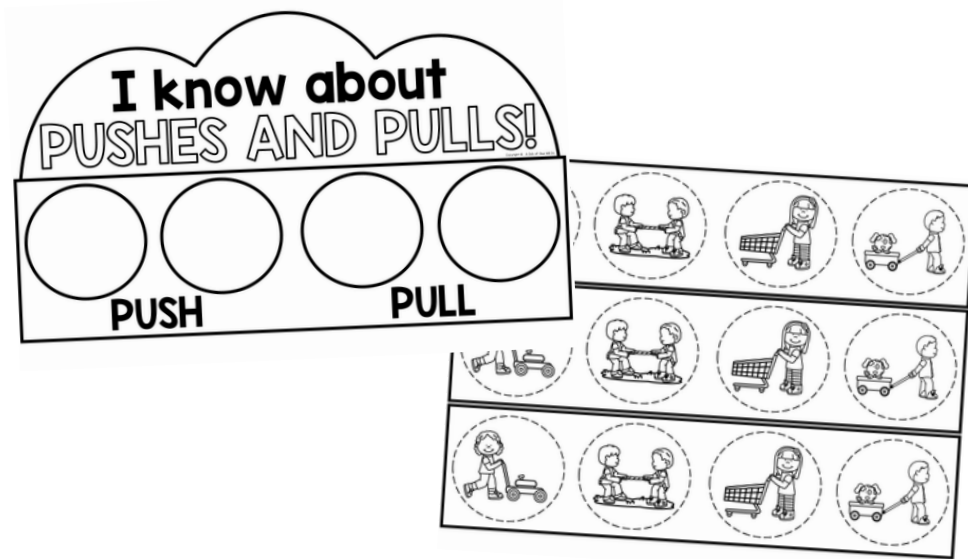
You can push a cart.

push and pull sort

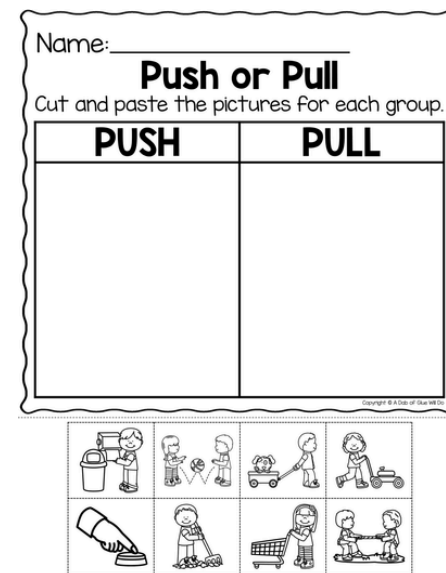
push and pull activity

pushes and pulls reader

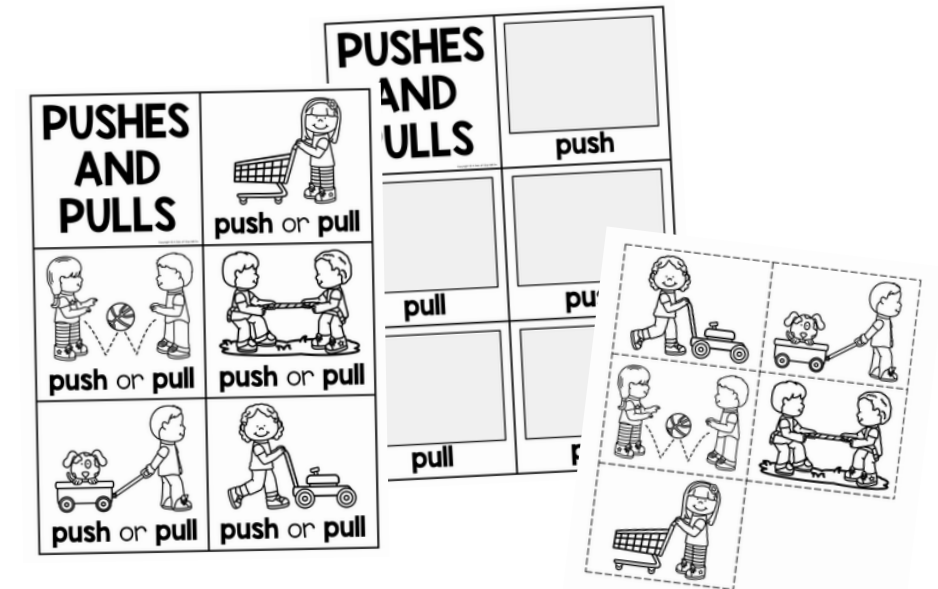
Take a Closer Look:



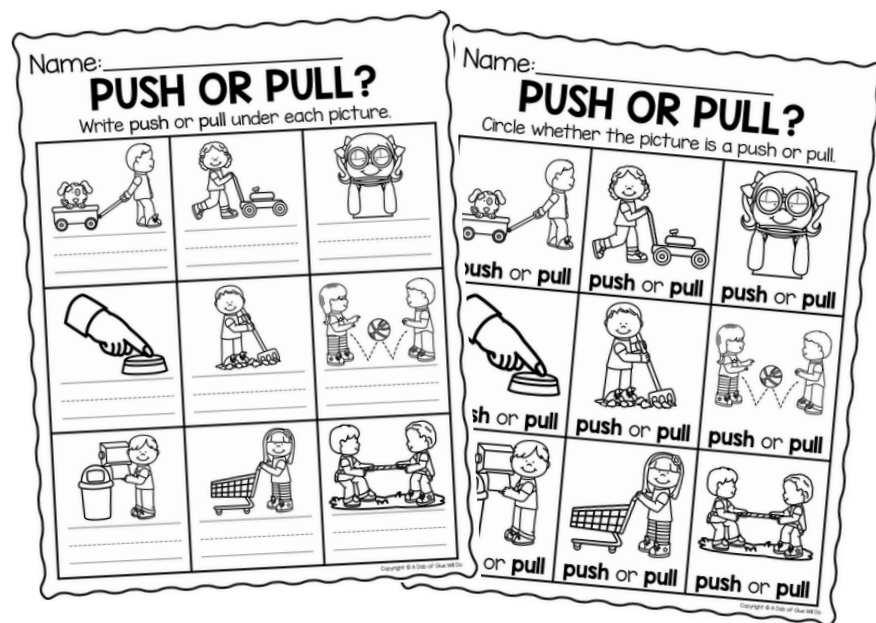
push or pull hat



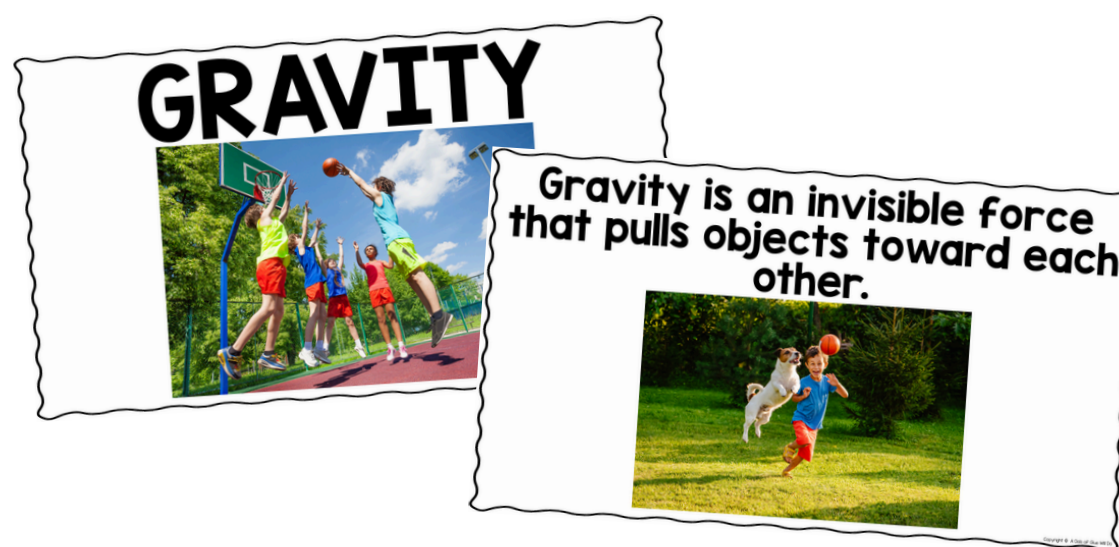
push or pull cut & paste



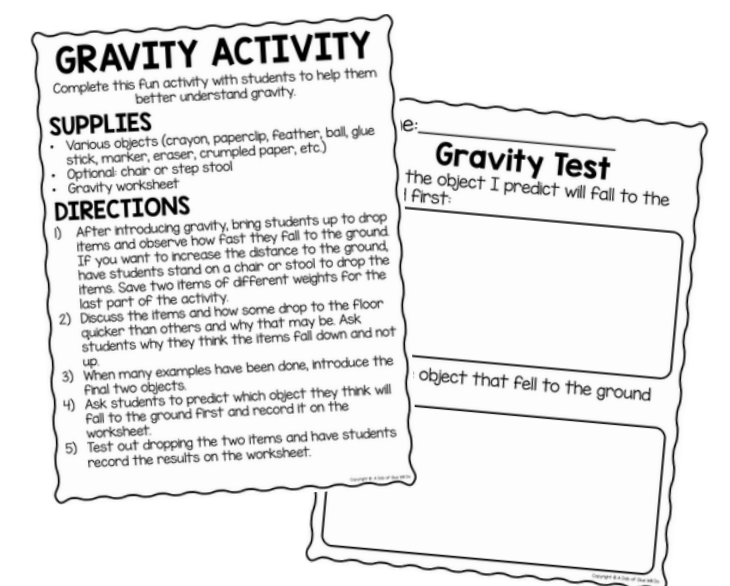
push and pull mini book



push or pull activities



gravity powerpoint



gravity activity

Take a Closer Look:

FRICITION



Friction is a force that slows down motion when an object rubs against another.



Name: _____

Friction Activity

is what the ramp looked like when the car moved the Fastest (less Friction)

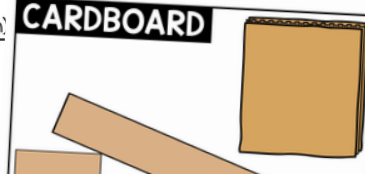
Material	How Far did it go?
_____ cubes	_____
_____ cubes	_____
_____ cubes	_____
_____ cubes	_____

is what the ramp looked like when it moved the slowest (more Friction):

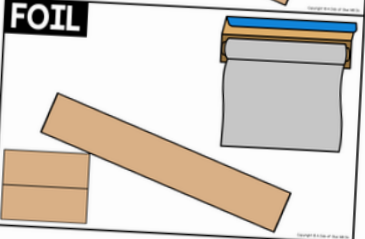
Which material made the car travel the longest? _____

Which material made the car travel the shortest? _____


CARDBOARD




FOIL



RAMPS



A ramp is long and flat, with one end that is higher than the other.



friction powerpoint

friction activity

ramps powerpoint

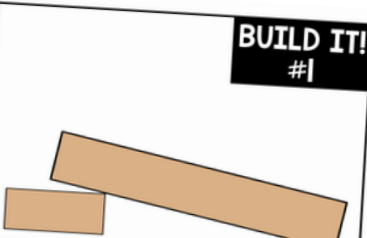
Name: _____

RAMP EXPERIMENT

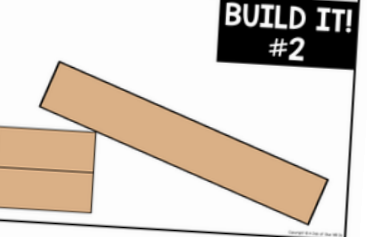
Build it!	How Far did it go?
_____ cubes	_____
_____ cube	_____
_____ cube	_____
_____ cube	_____

Color the ramp that made the object try Farthest **GREEN** Color the ramp that the object travel the shortest **RED**

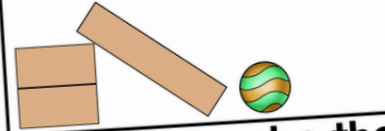
BUILD IT! #1




BUILD IT! #2



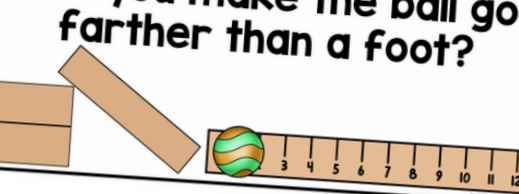
Can you make the ball go into a cup?



Can you make the ball knock something over?



Can you make the ball go farther than a foot?



ramps activity

ramp task cards

straw paint craft

Take a Closer Look:

FORCE & MOTION science

MATERIALS needed

- Force & motion books (see list)
- Construction paper
- Copy paper
- Glue
- Ramp materials (see directions)
- Rolling items (see directions)
- Items to drop (see directions)
- Clipboards

M **HOW THINGS MOVE**
Monday
 -Introduce the unit by completing the How Things Move PowerPoint
 -Answer question of the week
 -Complete the How Things Move Activity
Each day please see our selection of Force & motion songs, books, and videos!

T **PUSH AND PULL**
Tuesday
 -Read a nonfiction text about pushes and pulls
 -Complete Push and Pull PowerPoint
 -Complete Push and Pull Activity

W **GRAVITY**
wednesday
 -Read a nonfiction text about gravity
 -Complete Gravity PowerPoint
 -Complete Gravity Activity

Th **FRICITION**
Thursday
 -Read a nonfiction text about friction on force and motion
 -Complete Friction PowerPoint
 -Complete Friction Activity

F **RAMPS**
Friday
 -Read a nonfiction text about ramps on force and motion
 -Complete Ramps PowerPoint
 -Complete Ramps Activity

science: FORCE & MOTION

Dear Families,

We are learning all about force and motion in the classroom this week. We will be studying the different ways things move and pushes and pulls. We'll also be exploring gravity, friction, and ramps. Ask your child to share force and motion facts with you this week!

At-Home Activity:

To learn about force and motion at home, you can walk around your house with your child and look for items you push (vacuum, furniture, etc.) and items you pull (refrigerator door, microwave door, etc.). You can study the doors in your house and discuss how sometimes we push a door to open/close and sometimes we pull a door to open/close. You can also engage your child in fun playtime where you challenge them to use their own toys to create and test out ramps!

TEACHER GUIDE for FORCE & MOTION

HOW THINGS MOVE

- The world is full of living and nonliving things that move in ways that can be predicted and described.
- Forces are what cause an object to move. An object is at rest unless a force acts on it.
- Forces, including pushes, pulls, gravity, and friction, can move objects, stop them, and change their speed and direction. Knowing how and why things move is important because we must judge the amount of force to use when causing an object to move, stop, or change direction.
- Forces cause objects to move in different ways. Things can move in a straight line, a zigzag pattern, back and forth, up and down, or round and round.
- Objects can also move at different speeds.
- Pushes and pulls are two forces that can cause movement in objects.
- A push is a force that moves something away, like pushing a piece of furniture to the other side of the room or pushing someone on a swing.
- A pull is a force that moves something closer, like pulling up the zipper on a coat or pulling socks onto your feet.
- Sometimes we can apply a push and a pull to the same object, like how we can pull a door open or push a door closed.

GRAVITY

- Gravity is an invisible force that works across space, pulling objects toward each other.
- Isaac Newton discovered the law of gravity in the 1600s. He stated that the force of gravity between objects depends on their mass, or how much of an object, the greater its force of gravity.
- Gravity pulls objects toward the center of Earth. This is why objects fall down and why objects have weight. We could not live on Earth without gravity.
- Anything that has mass has gravity, even tiny objects.

FRICITION

- Friction is a force that acts between two objects that are touching each other. It can slow down or stop movement between the two touching surfaces.
- Friction can occur in all three states of matter: high friction, while those that allow more movement are described as low friction.
- Surfaces that slow movement down are described as high friction, while those that allow more movement are described as low friction.
- Friction can be helpful, like the brakes on a bicycle or a help us not to slip. Friction can cause heat when you rub your hands together. Friction can also cause each other when they're not supposed to, it can cause damage. Lubricants, or substances that help surfaces move against each other more smoothly, such as oil, can be used to reduce friction.

lesson plans

at-home letter

teacher guide

SCIENCE CENTER for FORCE & MOTION

GETTING STARTED

Fill your center with lots of fun and engaging materials that your students can use to investigate and explore force and motion. Suggested materials include: nonfiction books about force and motion, vocabulary cards, materials to make ramps, balls, cars, and other items that roll. You can also add the positional word posters and have students practice placing objects in the correct positions for each word. Encourage students to explore with the materials and make objects move in different ways. Ask students thought-provoking questions while exploring.

SHARING TIME

- Have the students who went to the science center that day tell the class what they discovered or observed and any questions they may have. We have a list of open-ended questions in this unit.
- If a child makes an exciting discovery in the science center, you can ask classmates to join you near the science center so your little scientist can share their findings and enthusiasm in just a short minute or two.
- Use a sign or chant that designates it is time for the kids to congratulate the scientist and return to their center. It can be as simple as a fist bump, high five, thumbs up, or a saying like, "Good Job, Good Job, Hey!"
- Your student's enthusiasm in the science center will entice others to go there tomorrow.

QUESTIONS TO ASK for FORCE & MOTION SCIENCE talk

- How can an object move? How can you move?
- In what directions can something move?
- Can you move in a straight line? A zig zag pattern? Back and forth? Up and down? Round and round? Can you move fast and slow?
- What does it mean to push something?
- What does it mean to pull something?
- What types of things do we push?
- What types of things do we pull?
- What can pushing help us do?
- What can pulling help us do?
- Why is gravity important?
- Why do our feet stay put on the ground?
- Why do things roll down ramps?
- What do ramps help us with?
- Where do you see ramps?
- Can you make a ramp in your classroom?
- What other simple machines can you think of?

How would you know _____?
 Why do you think that _____?
 What else might have caused _____?
 How can you explain your findings? Recall in your own words.
 How was it different than _____?
 How will you know if _____?
 Do you think you could _____?
 How did you decide _____?
 Can you tell me about that?
 How does that work?
 Can you draw me a picture of your findings?
 What will happen if _____?
 What do you think is most important?
 What happened when _____?
 What would you change if _____?
 How is this similar to something else you know?
 Can you think of another way _____?
 Create a new solution.
 How would you handle this problem/challenge/question?

FORCE & MOTION VIDEOS

To help with the planning of your Force and Motion Unit, we have curated a list of our favorite Force and motion VIDEOS!

FORCE & MOTION BOOKS

To help with the planning of your Force and Motion Unit, we have curated a list of our favorite Force and motion BOOKS!

Click a picture to be taken to the book on Amazon.

FORCE & MOTION SONGS

To help with the planning of your Force and Motion Unit, we've curated a list of our favorite Force and motion SONGS!

science center

science questions

resource lists

Take a Closer Look:

Name: _____

Do I Roll?
Cut and paste the pictures for each group.

YES	NO

I know all about WHAT CAN ROLL!

CAN ROLL CAN'T ROLL

DO I ROLL?

YES NO

do I roll cut & paste

what can roll hat

do I roll sort

Fast and Slow

FORCE & MOTION SENSORY BIN

Students can explore how things move and ramps with this sensory bin.

SUPPLIES

- Sensory table, tray, or bin
- Cardboard, flat trays, or anything that can be used as a ramp
- Toy that will roll: cars, balls, cylinder, coloring tools
- Toys that won't roll: animals, blocks, etc.

DIRECTIONS

- Fill the table, tray, or bin with materials.
- Encourage students to explore the materials and attempt to make them move in different ways.
- Have students make ramps and see which toys roll down them and which won't.

Forces and Motion

This is the way we push and pull, push and pull, push and pull.

This is the way we push and pull to make things move.
(pretend to push and pull with arms)

This is the way we drop the ____ drop the ____ drop the ____

This is the way we drop the ____ to show gravity.
(have students drop something on the floor)

fast & slow reader

sensory bin

fingerplay

Take a Closer Look:



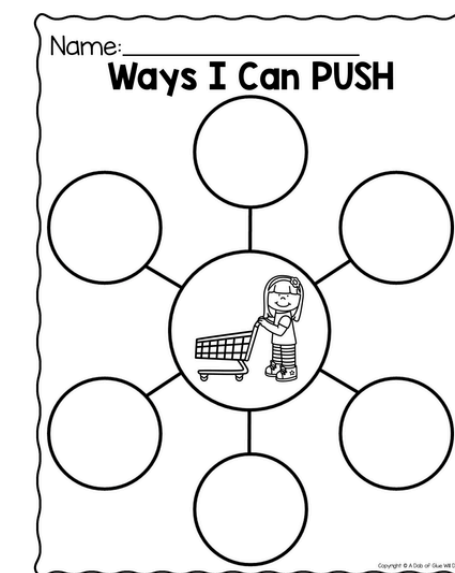
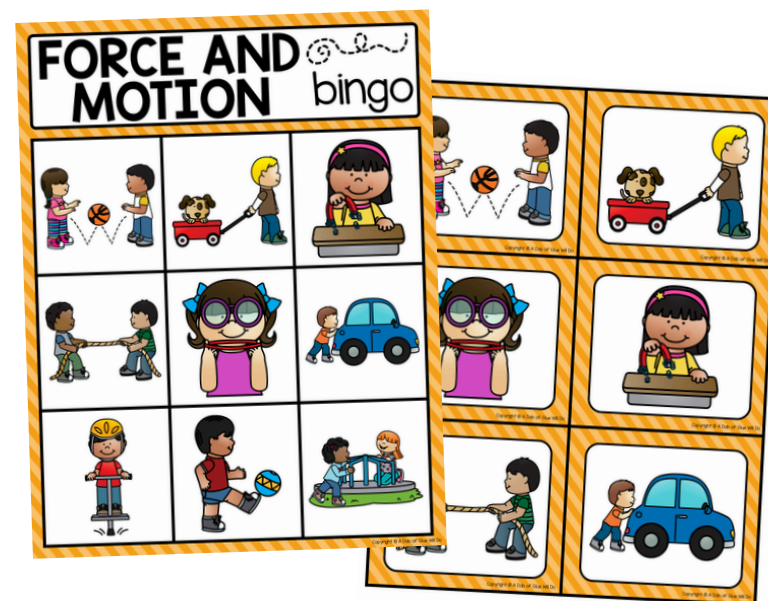
writing center

definition posters

word wall



YES NO



weekly question

force & motion bingo

and so much more!

Why Teachers LOVE it:



OPTIONS

- ✓ Variations for differentiating
- ✓ Printables in color and B&W



EASY TO USE

- ✓ Teacher Guide
- ✓ Lesson Plans
- ✓ Cross-curricular activities



ENGAGING

- ✓ Real Pictures
- ✓ Experiments
- ✓ Hands-on Activities



What Teachers Are Saying



“This is a great resource—clear, engaging, and well-organized. It worked well for my students!”



“This was so easy to prepare for and my kids love the activities. I liked that the prep was completely doable.”



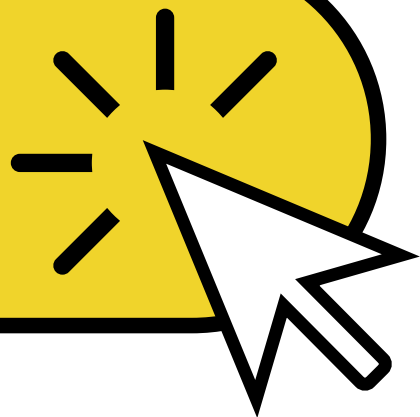
“This was a great resource to use in our push and pull unit. The experiments were very engaging.”



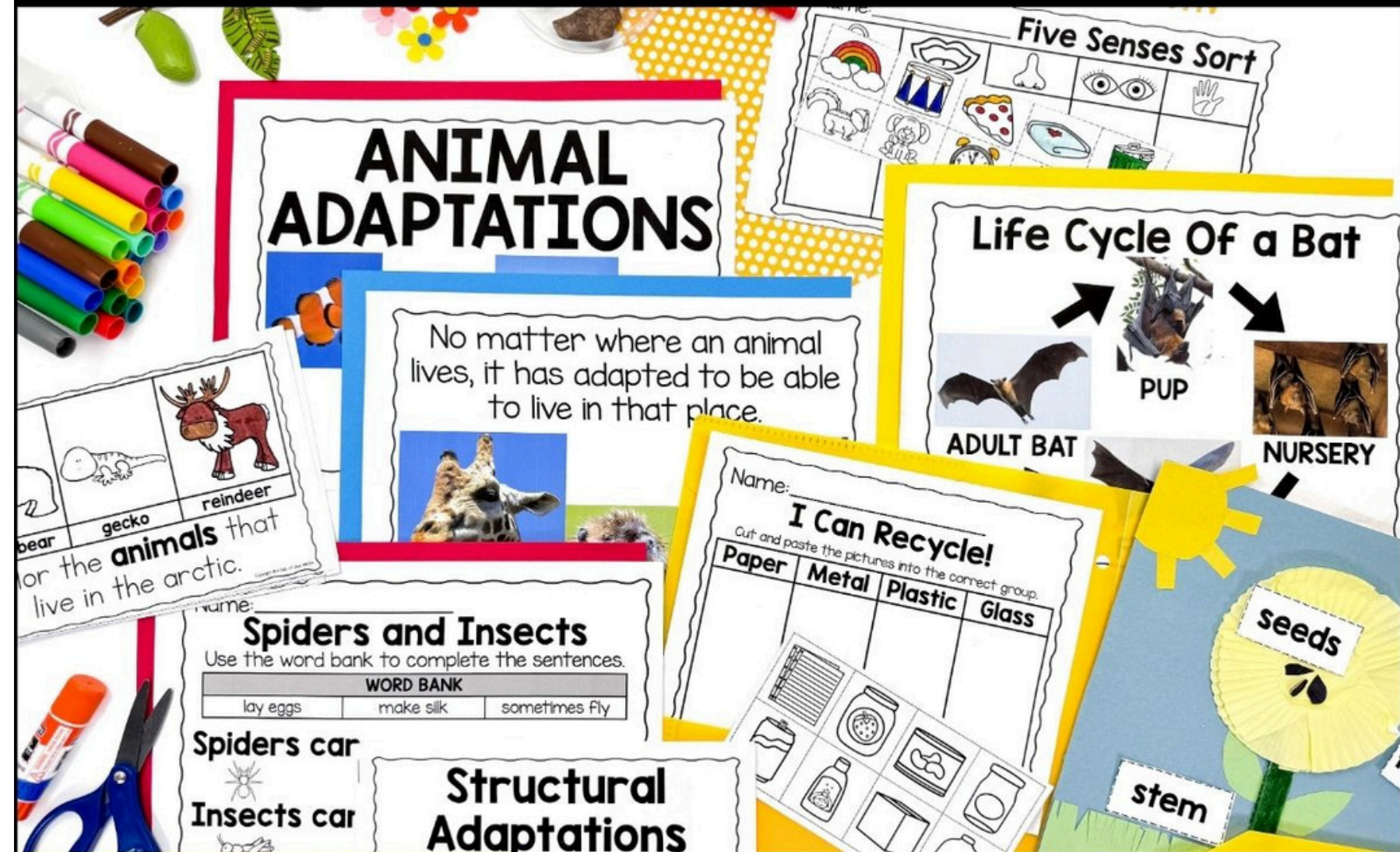
Buy the bundle and SAVE!

- ✔ Save \$320
- ✔ Get over 50 units
- ✔ 12 months of science experiments

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SCIENCE ENDLESS BUNDLE



KINDER over 50 units

meet the team

I'm Jennifer... I am the founder and creator of A Dab of Glue Will Do and Dollar Teachers Club. I taught Kindergarten and 1st grade. I have a stash of chocolate in my desk and a Starbucks tea in my hand to keep me going. I love reading and watching my kiddos play soccer and do taekwondo.

jennifer



Here at A Dab of Glue Will Do, our team makes the lives of busy teachers a little easier by creating meaningful classroom resources to engage, encourage, and meet the needs of their little learners.

When you purchase from us, know that you're getting quality products made by teachers, for teachers. Customer service is our top priority, so please reach out to us with any questions or concerns.



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