



Preview - Information



Thank you for your interest in this product. Within this preview, you will see:

- ✓ A selection of Ready-To-Use Google Slides Lessons.
- ✓ A selection of worksheets included in the workbook.

When you make a purchase, you will receive a folder that contains the .pdf workbook file and a link to where you can make a copy of the Google Slides Lessons unit to your Google Drive.

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Google Slides Lessons Preview





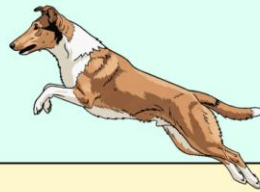
Alberta Science Curriculum Energy (Movement) Unit – Grade 1

3-Part Lesson Format

Part 1 – Minds On!

- Learning Goals
- Discussion Questions
- Quotes
- And More!

WHAT IS MOVEMENT?



LEARNING GOAL

We are learning to **tell how things move** so we can talk about moving **up, down, forward, backward, sideways, and toward or away from places.**

MOVEMENT DETECTIVE ACTIVITY: FIND THE DIRECTION

Read each sentence. Drag the correct letter (A, B, or C) to the empty box.

1) I jump high off the ground.	A) Down	B) Sideways	C) Up	<input type="text"/>
2) I walk to the door in front of me.	A) Forward	B) Backward	C) Down	<input type="text"/>
3) I slide to the right without turning.	A) Sideways	B) Forward	C) Down	<input type="text"/>
4) I walk closer to the park.	A) Away	B) Toward	C) Backward	<input type="text"/>

A

B

C

Part 2 – Action!

- Writing
- Matching
- Drag and Drop
- Drawing
- And More!

Part 3 – Consolidation!

- Exit Cards
- Quizzes
- Reflection
- And More!



Consolidation – Reflection

Complete these sentences about movement. Use what you know about moving up, down, forward, backward, sideways, and toward or away.

- 1) I learned that movement means _____.
- 2) One way my body can move is _____.
- 3) When I slide to the left or right, I move _____.
- 4) When I jump, I move _____.





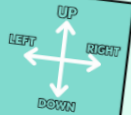
Alberta Science Curriculum Energy (Movement) Unit – Grade 1

SORTING ACTIVITY – NATURAL OR HUMAN-MADE MOVEMENT? (PLACE A ✓ IN THE CORRECT COLUMN.)

Action	Natural Movement	Human-Made Movement
1 A child riding a bike		
2 A car driving on the road		
3 Leaves falling from a tree		
4 A ball kicked across the field		
5 A river flowing downhill		
6 Trees swaying in the wind		

Use this to complete the activity: ✓

HOW DO WE FOLLOW DIRECTIONS



Help the boy below how to get to the items using the four different directions: Up, Down, Left and Right

A **B** **C**

- Which direction should the boy go to get to the ball?

A) 2 squares down, then 1 square to the left	B) 1 square down, then 2 squares to the left	C) 1 square down, then 2 squares to the right
--	--	---
- Which direction should the boy go to get to the Maple Tree?

A) 2 squares up, then 1 square to the left	B) 2 squares up, then 2 squares to the right	C) 2 squares up, then 2 squares to the left
--	--	---
- Which direction should the boy go to get to the Hockey Stick?

A) 1 square up, then 2 squares to the right	B) 1 square up, then 2 squares to the left	C) 1 square right, then 2 squares to the up
---	--	---

INVENTING THE WHEEL

Read each sentence. Decide if it is true or false.

- The Sumerians made the first wheel.
- A car drives on four wheels.
- A bike moves because its wheels turn.
- The first wheel was created a long time ago.
- A truck carries goods on wheels.
- The Sumerians designed a round shape that could roll.

Using the Wheel

Inventing the wheel



Alberta Science Curriculum Energy (Movement) Unit – Grade 1

SORT THE OBJECTS: RUBBER OR NOT RUBBER

Drag each object to the correct box to show if it is made of rubber or not rubber.

Rubber	Not rubber










SMOOTH OR ROUGH?

Read each sentence. Decide if the surface is smooth or rough.

1) A puck moves fast on ice.		
2) Shoes grip the carpet and do not slide far.		
3) A car drives slowly on a rocky road.		
4) A book slides easily on a desk.		
5) A toy car moves quickly on a glass table.		

Smooth Surface

Rough Surface

FAST OR SLOW?

Place a ✓ in the correct column.)

Action	Fast	Slow
1 A turtle walking on the grass		
2 A car driving on the road		
3 A lion running to catch food		
4 A snail moving on a leaf		
5 A plane flying in the sky		
6 A slug crawling on the ground		

Use this to complete the activity: ✓



Workbook Preview



Grade 1 – Science Unit

Organizing Idea Matter: Energy: Understandings of the physical world are deepened by investigating matter and energy

Guiding Question: How can movement of objects and animals be understood?

	Learning Outcome - Students investigate direction, pathway, and speed of moving objects and animals.	Pages
EM.1	<ul style="list-style-type: none"> Directions of movement can be described as: up, down, forward, backward, sideways, toward, away from 	17, 34, 48, 54, 58, 75
	<p>such as: rolling, bouncing, sliding</p> <ul style="list-style-type: none"> Speed can be described as: fast, slow, changing, not changing 	
EM.2	<p>The movement of objects can be influenced by:</p> <ul style="list-style-type: none"> the shape of the object the materials the object is made from the surface texture of the object interactions with other objects <p>Wheels can make objects easier to move.</p>	49-51, 55, 59-62
Computer Science - <u>Learning Outcome</u>		
CS.1	Students follow instructions and relate them to outcomes.	18-21, 35-36

Preview of 60 pages from this product that contains 120 pages total.

ENERGY MOVEMENT



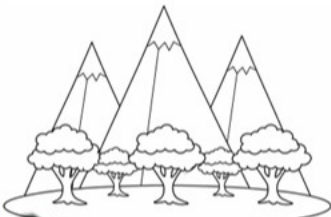
Relative Location – Under, Over, In Front, Behind

Questions

Circle the correct answer

1) The trees are _____ of the mountains.

- a) Under
- b) Over
- c) In Front
- d) Behind



2) The bird flew _____ the pond.

- a) Under
- b) Over
- c) In Front
- d) Behind



3) The chair is _____ the table.

- a) Under
- b) Over
- c) In Front
- d) Behind



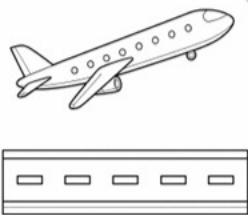
4) The person is _____ the cash register.

- a) Under
- b) Over
- c) In Front
- d) Behind



5) The plane flew _____ the road.

- a) Under
- b) Over
- c) In Front
- d) Behind



6) The soccer field is _____ of the school.

- a) Under
- b) Over
- c) In Front
- d) Behind



7) The sun shines _____ the waterfall.

- a) Under
- b) Over
- c) In Front
- d) Behind



8) The rain falls _____ the clouds.

- a) Under
- b) Over
- c) In Front
- d) Behind



9) The mountains are _____ the tent.

- a) Under
- b) Over
- c) In Front
- d) Behind



10) The boy jumps _____ the trampoline.

- a) Under
- b) Over
- c) In Front
- d) Behind



Relative Location – Under, Over, In Front, Behind

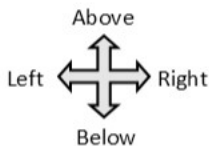


Questions

Answer the questions below by looking at the scene above

Questions	Under, Over, In Front, Behind
1) The truck is ____ the hawk (bird)	
2) The car is ____ of the power lines	
3) The power lines are ____ of the mountain	
4) The hawk flies ____ the road	
5) The cloud is ____ the family	
6) The mountain is ____ the family	
7) The grass is ____ of the road	

Relative Location – Above, Below, Left, Right



Questions Answer the questions by looking at the scene above

Questions	Above Below To the left To the right
1) The clock is _____ the light	
2) The carpet is _____ the table	
3) The light is _____ the carpet	
4) The TV is _____ of the light	
5) The bookshelf is _____ of the TV	
6) The TV is _____ the TV stand	
7) The clock is _____ of the plant	

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: _____

Where is the apple? Is it above, below, to the right, to the left?

 _____	 _____
 _____	 _____

Name: _____

Where is the apple? Is it above, below, to the right, to the left?

 _____	 _____
 _____	 _____

Name: _____

Where is the apple? Is it above, below, to the right, to the left?

 _____	 _____
 _____	 _____

Name: _____

Where is the apple? Is it above, below, to the right, to the left?

 _____	 _____
 _____	 _____

PREVIEW

Relative Location - Drawing

Questions

Draw these things in the correct location

1) A house in the middle	<input type="checkbox"/>
2) A car to the left of the house	<input type="checkbox"/>
3) A tree to the right of the house	<input type="checkbox"/>
4) A mountain behind the house	<input type="checkbox"/>
5) A cloud above the car	<input type="checkbox"/>
6) A cloud above the tree	<input type="checkbox"/>
7) The sun to the right of the cloud	<input type="checkbox"/>
8) A road below the house	<input type="checkbox"/>



PREVIEW

Relative Location

Directions Where is the boy? Write the number from the picture beside the preposition

WHERE IS THE BOY?

MATCH THE PREPOSITION OF PLACE TO THE CORRECT PICTURES.



- TO THE RIGHT
- TO THE LEFT
- IN
- BETWEEN
- IN FRONT OF
- BEHIND
- ON
- THROUGH
- NEAR

Relative Location

Directions

Fill in the blanks below



Questions	on	in	next to	behind	under
1) The owl is _____ the bed.					
2) The ball is _____ the table.					
3) The gift is _____ the dog.					
4) The dog is _____ the table.					
5) The ball is _____ the bag.					
6) The cat is hiding _____ the bed.					
7) The bag is _____ the table					

Non-Standard Units – Describing Position

In this activity, you will count how many steps different objects are away from you. You will need to always face the same direction when you start.

For example: If a friend sits in front of you, you will count how many steps they are in front of you. If they sit in front of you and to the right, you will have two measurements to record. It may be 5 steps forward and 3 steps to the right.

Explain _____ answer the questions below

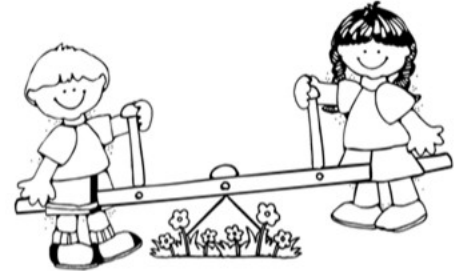
Questions	Answer
1) How many steps away is the door from you? Will you move forward, backward, left, or right? Give directions to the door.	
2) How many steps is a friend away from you? Write the friend's name and the directions to get there.	
3) How many steps away is the closest window to you? Describe the directions to get there.	
4) How many steps away is the teacher's desk from you? Describe the directions to get there.	
5) How many steps away is the classroom's clock? Describe the directions to get there.	

Movement

What is Movement?

In our world, things move in different directions.

Here are some ways we can describe these movements:



1) Up and Down

When we sit down, we move down. When we stand up, we move up.

2) Forward and Backward

We can walk forward to our friend. We can also take steps back, walking backwards.

3) Sideways

When we slide to the left or right, we are moving sideways.

4) Toward and Away From

When we walk to the park, we move toward the park. When we leave the park, we move away from it.

Directions

Draw pictures of you moving in each way below.

Moving Up and Down

Moving Forward and Backward

Moving Sideways

Moving Towards or Away From

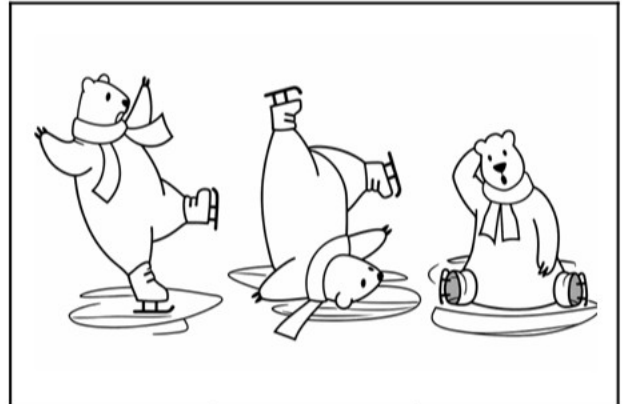
Movement

Questions

Circle how the person/animal/object is moving in the pictures below



Up



Up

Down

Forward



Towards the net

Away from the net



Forwards

Backwards

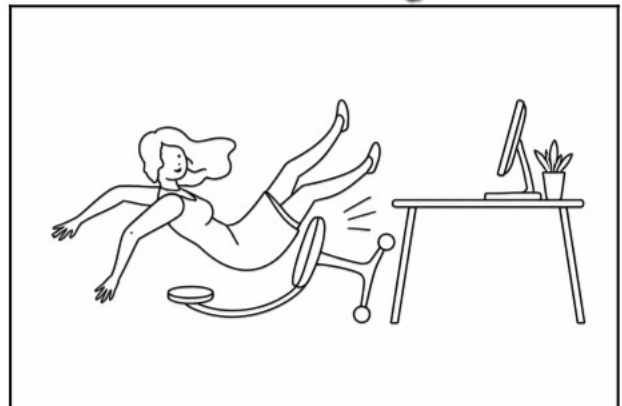
Sideways



Forwards

Backwards

Sideways



Forwards

Backwards

Sideways

PREVIEW

Activity – Guess the Movement

Objective

What are we learning about?

To understand different directions of movement (up, down, forward, backward, sideways, toward, and away from).

Materials

What do we need?

- ✓ A large open space with enough room to move freely
- ✓ A set of cards with different movement directions (up, down, forward, backward, sideways, toward, away from)

Method

How do we complete the experiment?

- 1) Begin by explaining the different directions of movement to the students. Give real-world examples to help them understand better.
- 2) Shuffle the set of cards and place them facedown in a pile.
- 3) Have a student pick a card and perform the movement direction written on the card. For example, if a student picks the 'forward' card, they could walk a few steps forward.
- 4) Allow other students to guess the movement direction. Once guessed correctly, explain again what the movement means.
- 5) Repeat the process until all movement directions have been performed and understood.



Activity – Guess the Movement

Directions Cut out the cards below

UP	DOWN
FORWARD	BACKWARD
SIDEWAYS	TOWARDS
AWAY FROM	

PREVIEW

Natural and Human-Made Movement

Natural Motion

Natural motion happens by itself, no people needed! Look at these:

- Trees swing when wind blows.
- Rivers flow from high places to low places.
- Birds fly up, down, and side to side.
- Leaves fall from trees in autumn.



Human-Made Motion

Human-made motion happens because people make it:

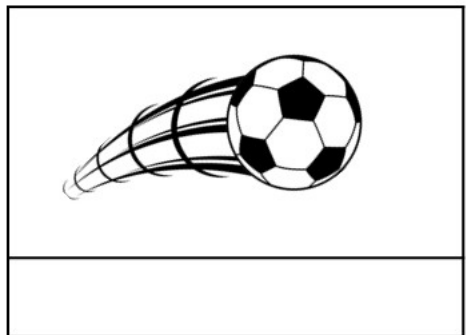
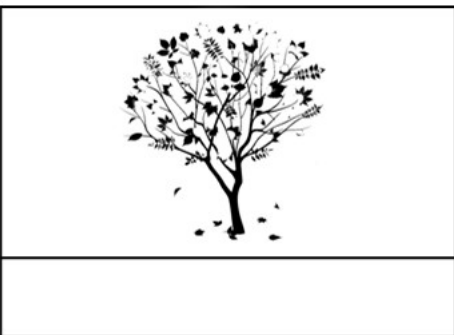
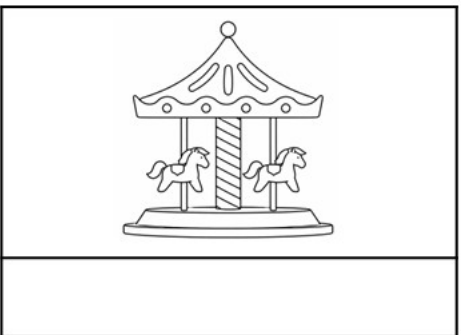
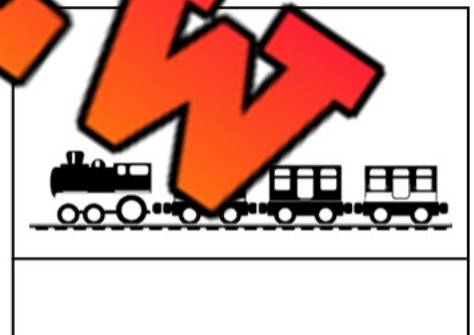
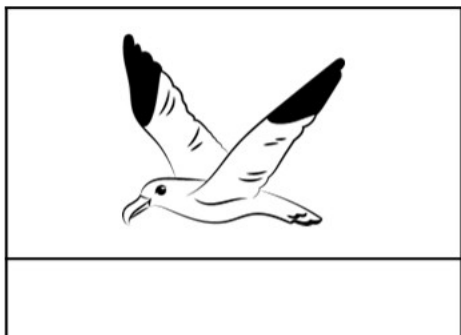
- Bicycles move forward when you pedal.
- Cars need a driver to go slow or fast or left or right.
- When you throw or kick a ball, it moves.
- Swings move back and forth when you push.



PREVIEW

Directions

Is the movement natural or human-made?







Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: _____

	Mark

Check the pictures that show human-made movement.

Name: _____

	Mark

Check the pictures that show human-made movement.

Name: _____

	Mark

Check the pictures that show human-made movement.

Name: _____

	Mark

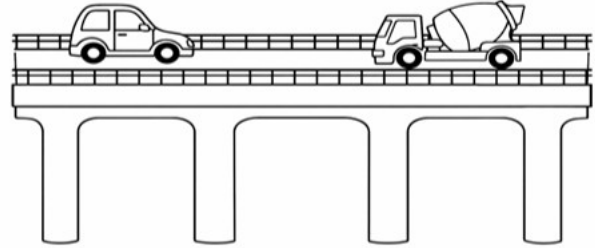
Check the pictures that show human-made movement.

Moving Objects - Pathways

Movement Pathway

A movement pathway is the path an object or animal follows when it moves.



- In a straight line

An elevator moves straight up and down. A car drives straight if the road is straight. A window moves in a straight line.

- In a curve

Cars drive in a curve when they go around a bend. Trains move in a curve. A train track is not straight. Instead, it has many curved parts.

- Back and forth

Things that vibrate move back and forth. A guitar string vibrates back and forth, and up and down. A ride on a swing will move back and forth.

- In a circle

A merry-go-round moves in a circle. A record player also spins in a circle. Some rollercoasters spin you in a circle as well.



- Zig-Zag

A snowboarder and skier will go down the hill in a zigzag pattern to slow them down. Every turn they do slows their movement down the hill.

- Up and down

An elevator moves up and down and so does a yoyo. A ride on a seesaw will also move you up and down.



Yes or No

Is the answer yes or no?



1) Does a merry-go-round move in a curve	Yes	No
2) Does a snowboarder move in a zig-zag	Yes	No
3) Does a yo-yo move up and down	Yes	No
4) Does a guitar string move in a circle	Yes	No
5) Does a yo-yo move up and down	Yes	No

Draw

Draw the movement pathways below

Straight Path

Curve Path

Circular Path

Zig-zag Path

Making Connections

When do you move in the ways below? Draw and write.

In a Curved Pathway	
In a Circular Pathway	

Different Ways Objects Move

Directions

Use the word bank to label each type of movement

Circular

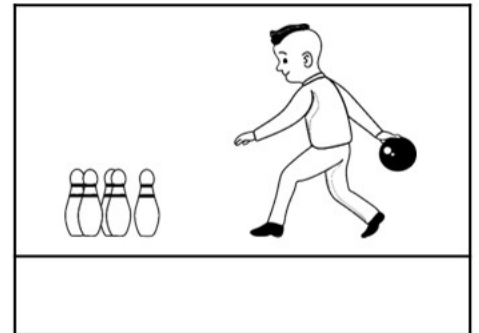
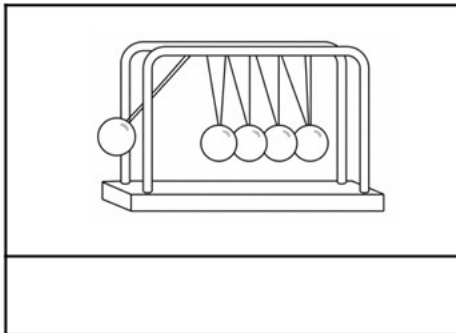
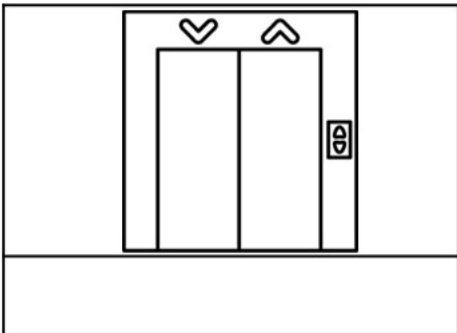
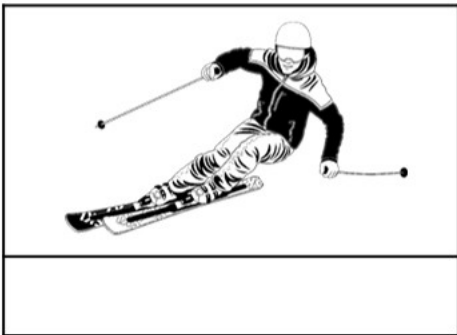
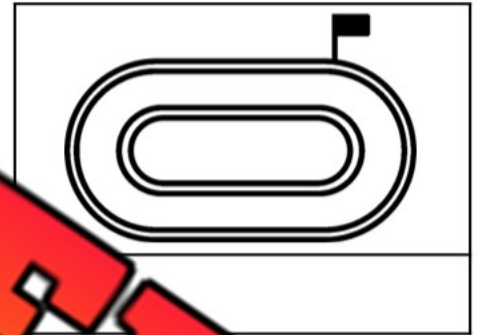
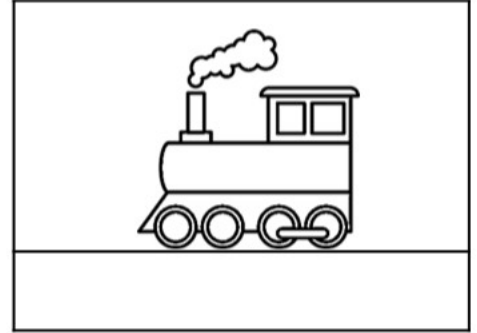
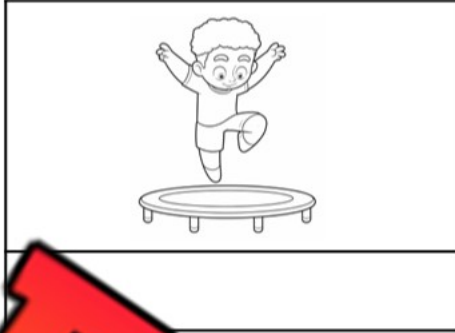
Up and Down

Back and Forth

Curved

Straight

Zig-Zag



PREVIEW

Story – Sammy the Squirrel

The Adventure of Sammy the Squirrel

Once upon a time, in a large and lush green park, there lived a little squirrel named Sammy. Sammy was always full of energy and loved to explore.

One sunny morning, Sammy decided to look for new places to find his favorite nuts. He ran in a straight line across the park, his little paws moving swiftly on the soft grass.

Sammy then ran along a long curvy pathway that was lined with pretty flowers. He thought this might be a good place to look for nuts. So, he decided to follow the pathway, moving in a curve. He turned right and left, following the winding pathway.

Just as Sammy was about to reach the end of the curvy path, he spotted a tall tree with a spiral-shaped vine. It looked like a great place to look for nuts. Sammy thought it would be fun to climb up the vine. So, he moved up the vine in a spiral, turning right and round, until he reached the top. From up there, Sammy had a beautiful view of the entire park.

But oh! Sammy noticed an old log on the ground nearby that he hadn't seen before. It was on its side and looked just like the perfect place to find some yummy nuts. So, he quickly slid down the vine and dashed towards the log.

Once he reached the log, he started to move side to side, peeking into each end of the log to search for nuts. To his delight, Sammy found a stash of the most delicious nuts he had ever seen.

That evening, Sammy went home with a full belly and a big smile. His adventure had taken him in a straight line, along a curved path, up in a spiral, and from side to side. He couldn't wait to share the story of his exciting day with his friends!

And so, Sammy learned that the world around him was full of interesting pathways, each one leading to a new adventure. From then on, every day was a new journey for Sammy, full of exciting ways to move and explore.

PREVIEW



Name: _____

Draw

While listening to the story, draw the path Sammy takes

PREVIEW

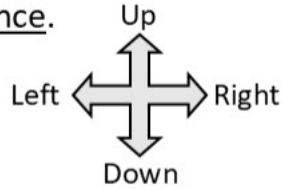
Following Directions – Up, Down, Left, Right

When we move something or someone from one location to another, we describe the movement using direction and distance.

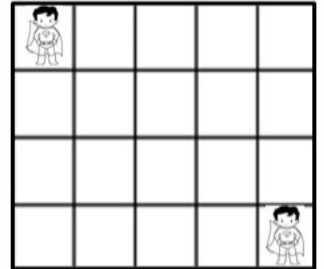
Directions – Left, Right, Up, Down

Distance – Steps, Metres

Example of movement – the child went down 3 steps, and right 4 steps.



start

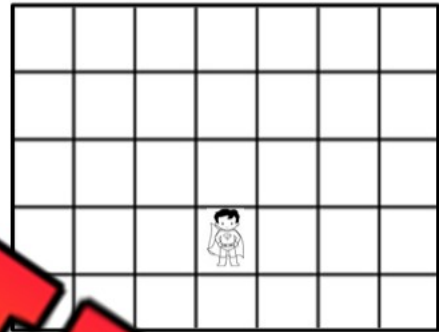


Question: Put an X where you think the child will end up

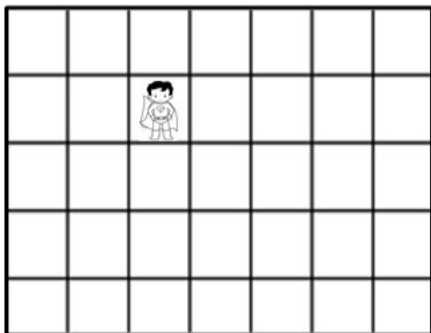
1) Directions – down 2 steps, right 3 steps



2) Directions – up 2 steps, right 2 steps



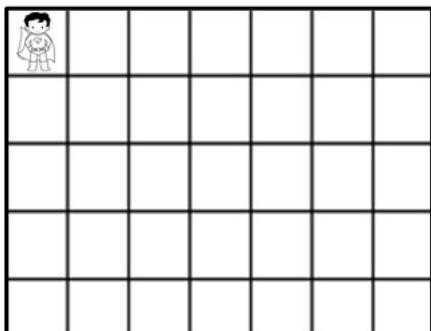
3) Directions – down 3 steps, right 3 steps



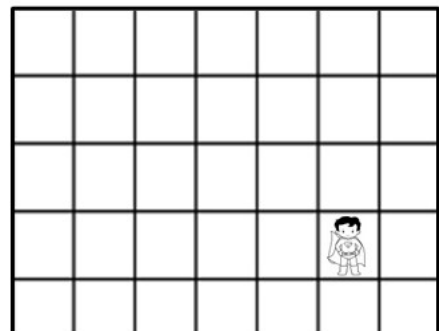
4) Directions – up 1 step, right 2 steps



5) Directions – down 4 steps, right 5 steps



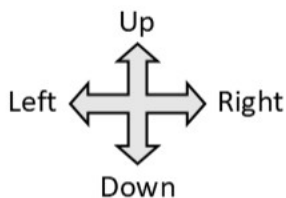
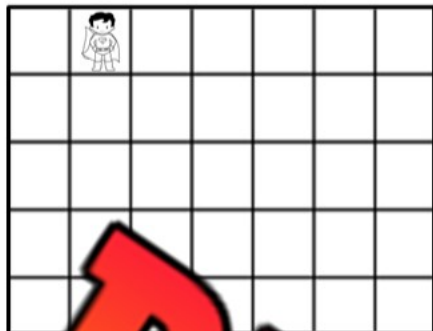
6) Directions – up 2 steps, left 4 steps



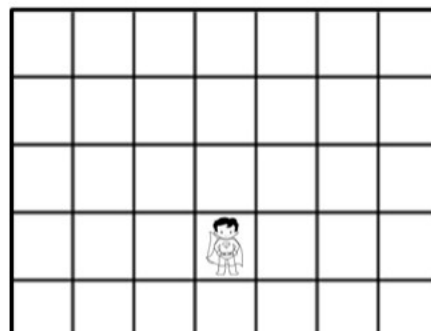
Questions

Put an X where you think the child will end up

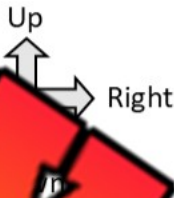
1) Down 2 steps right 3 steps, down 2 steps



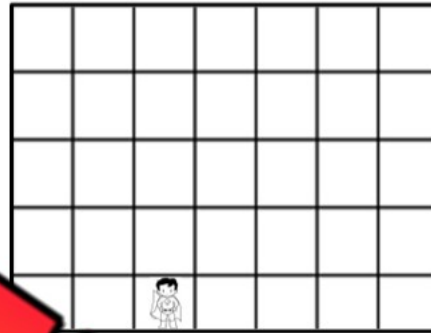
2) Left 2 steps, up 3 steps, right 4 steps



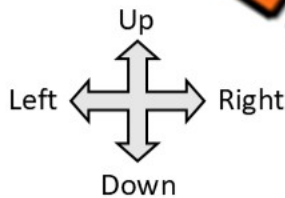
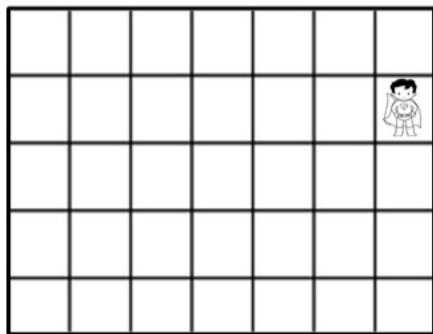
3) Down 3 steps, right 3 steps, up 2 steps



4) Up 2 steps, right 3 steps, down 1 steps



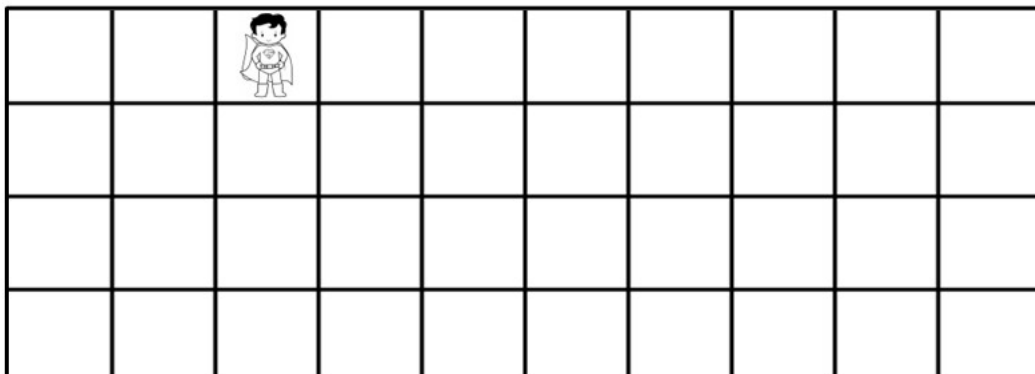
5) Left 5 steps, down 3 steps, right 4 steps



6) Right 3 steps, up 5 steps, down 2 steps



7) Right 5 steps, down 3 steps, left 7 steps, up 3 steps, right 2 steps

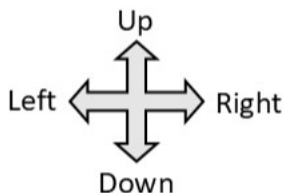
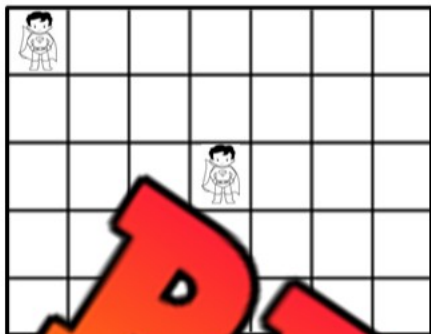


Describing Directions – Up, Down, Left, Right

Questions

Describe how the child moved from the start to the end

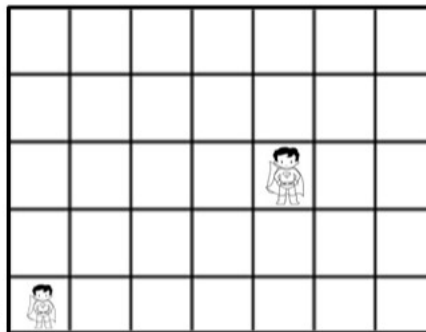
1) start



Move _____ spaces

Move _____ spaces

2)

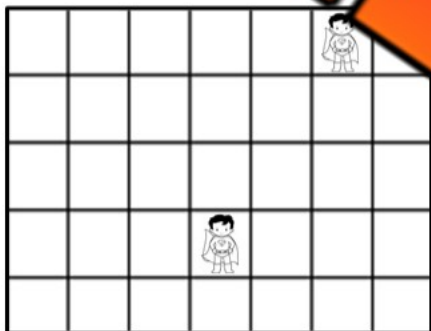


start

Move _____ spaces

Move _____ spaces

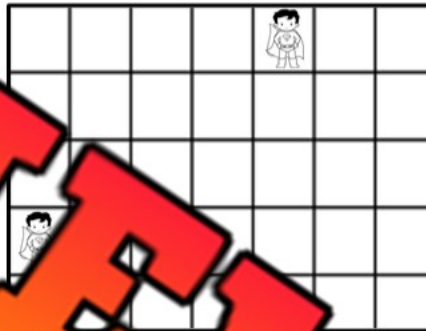
3)



Move _____ spaces

Move _____ spaces

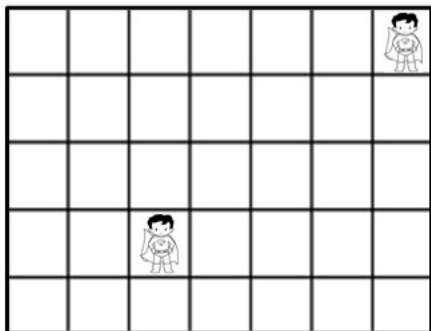
4)



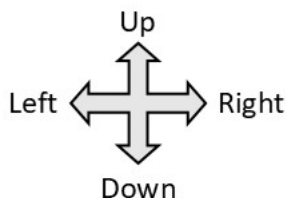
Move _____ spaces

Move _____ spaces

5)



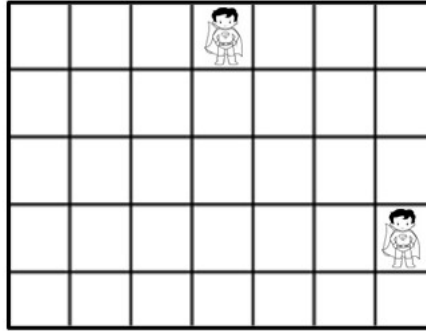
start



Move _____ spaces

Move _____ spaces

6)




start

Move _____ spaces


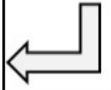
Move _____ spaces

Coding – Robot Lawn Mower



This is a self-driving lawn mower

		
It under com		



Right makes it turn right

		
Right		

Left makes it turn right

		
Left		


Forward makes the car move forward by the number shown

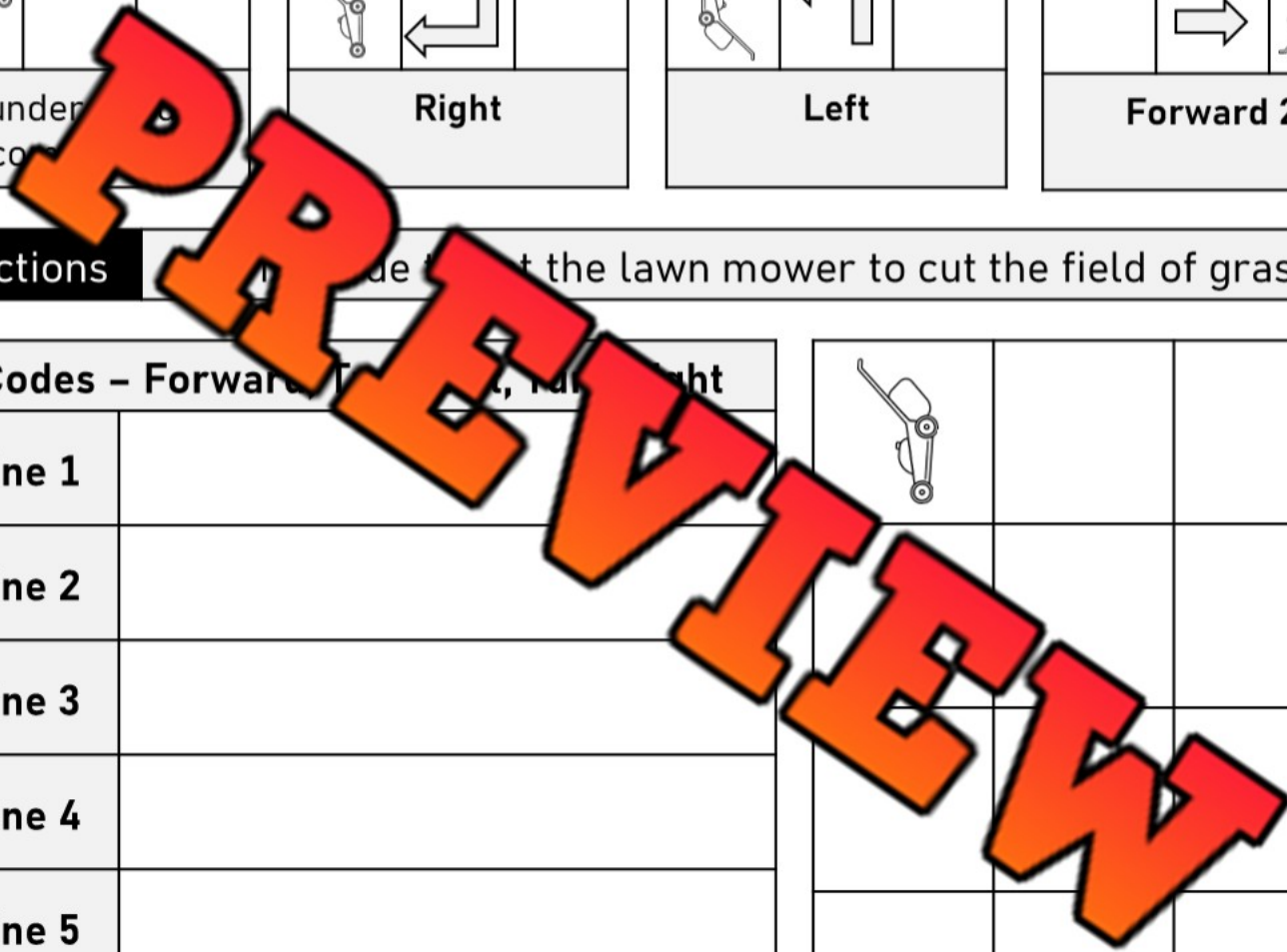
		
Forward 2		

Directions

Use the codes to make the lawn mower to cut the field of grass

Codes – Forward, Turn Left, Turn Right	
Line 1	
Line 2	
Line 3	
Line 4	
Line 5	
Line 6	
Line 7	
Line 8	
Line 9	



Directions

Write code to get the lawn mower to cut the field of grass

Codes - Forward, Turn Left, Turn Right

Line 1	
Line 2	
Line 3	
Line 4	
Line 5	
Line 6	
Line 7	
Line 8	
Line 9	
Line 10	
Line 11	
Line 12	
Line 13	
Line 14	
Line 15	
Line 16	
Line 17	
Line 18	
Line 19	
Line 20	
Line 21	

Roll, Bounce, Slide

Roll, Bounce, Slide

Objects and animals move in different ways. They can roll, bounce, and slide.

Roll

Objects that roll go around and around. Like a ball or a car. When you push a ball, it rolls away. Cars have wheels that roll!

Bounce

Objects can bounce. When you drop a bouncy ball, it jumps back up. That's bouncing. It goes down then up again.



Slide

Sliding is another way things move. Like a child sliding down a slide at the park. A toy car can slide down a ramp too.

Animals can also move these ways. A panda can roll. A kangaroo bounces. A penguin slides on its belly.

PREVIEW

Draw

Draw objects or animals moving in the ways below.

Rolling

Bouncing

Sliding

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: _____

Mark

Circle how each object moves:
Roll (R), Bounce (B), or Slide (S).

1) Ball	R	B	S
2) Toy Car	R	B	S
3) Hockey Puck	R	B	S
4) Ice Skater	R	B	S
5) Basketball	R	B	S
6) Tire	R	B	S
7) Ping Pong Ball	R	B	S

Name: _____

Mark

Circle how each object moves:
Roll (R), Bounce (B), or Slide (S).

1) Ball	R	B	S
2) Toy Car	R	B	S
3) Hockey Puck	R	B	S
4) Ice Skater	R	B	S
5) Basketball	R	B	S
6) Tire	R	B	S
7) Ping Pong Ball	R	B	S

Name: _____

Mark

Circle how each object moves:
Roll (R), Bounce (B), or Slide (S).

1) Ball	R	B	S
2) Toy Car	R	B	S
3) Hockey Puck	R	B	S
4) Ice Skater	R	B	S
5) Basketball	R	B	S
6) Tire	R	B	S
7) Ping Pong Ball	R	B	S

Name: _____

Mark

Circle how each object moves:
Roll (R), Bounce (B), or Slide (S).

1) Ball	R	B	S
2) Toy Car	R	B	S
3) Hockey Puck	R	B	S
4) Ice Skater	R	B	S
5) Basketball	R	B	S
6) Tire	R	B	S
7) Ping Pong Ball	R	B	S

Animals and Objects that Roll

Things That Roll

Round things, like balls, can roll. If you push a football, it goes round and round. Toy cars roll too because of their round wheels.

Rolling in Nature

Round rocks can roll down a hill. The hill's slope and gravity make the rock roll.

Animals That Roll


Some animals like to roll. A dog might roll on its back for fun. A roly-poly bug rolls into a ball when it is scared. Hedgehogs roll to get away from dangerous animals.

Why is Rolling Helpful?


Rolling is an easy way to move round things need just a little push to roll a long way. Animals might roll for fun or just to play.


Directions


Will this object roll?


	
Yes	No


	
Yes	No


	
Yes	No

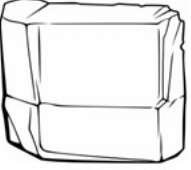
	
Yes	No

	
Yes	No

	
Yes	No

	
Yes	No

	
Yes	No

	
Yes	No

Activity – Rolling Objects

Objective

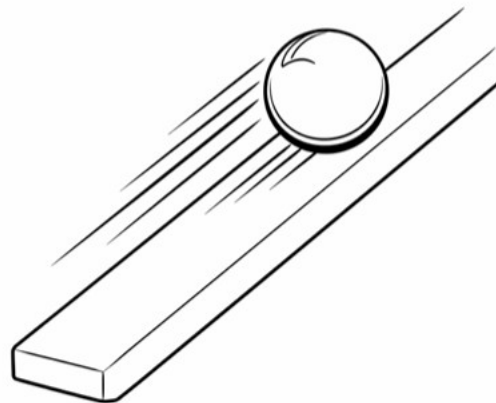
What are we learning about?

To help students understand how and why different objects roll.

Materials

What do we need?

- ✓ Various round objects (balls of different sizes, marbles, coins)
- ✓ Various objects that don't roll well.
- ✓ A ramp made of a piece of cardboard or a large book
- ✓ A smooth surface (optional)
- ✓ Markers and paper for each student



Method

How do we complete the experiment?

- 1) Begin by discussing what rolling means and showing examples with a couple of objects.
- 2) Set up your ramp on a smooth surface.
- 3) Have students take turns selecting an object and predicting if it will roll well or not.
- 4) Let the student place the object at the top of the ramp and let it roll down.
- 5) Ask the student to observe how the object rolls. Does it roll straight? Does it go far?
- 6) Repeat this process with each object.
- 7) After all the objects have been tested, have a group discussion about what they observed. Which objects rolled the best? Which ones did not roll as well? Why do they think this is?

Results

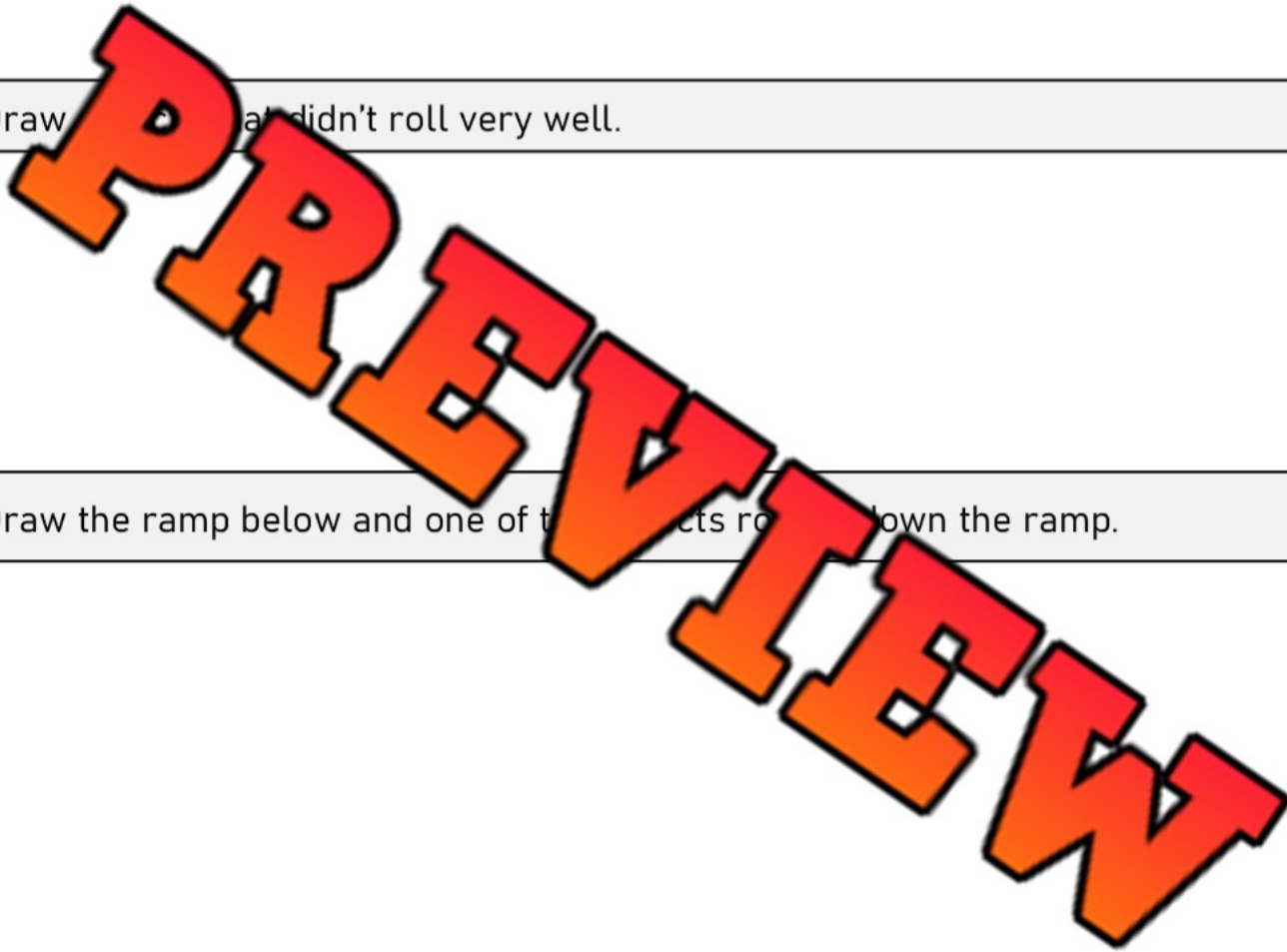
Answer the questions below

1) Draw the objects that rolled the best.

2) Draw _____ that didn't roll very well.

3) Draw the ramp below and one of the objects roll down the ramp.

4) Write a sentence about how the object rolled above. Did it roll fast, slow, straight or curved?



Invention of the Wheel

The Invention of the Wheel

A long, long time ago, there were smart people called the ancient Sumerians. They lived in a place we now call Iraq. The Sumerians came up with a wonderful idea - the wheel!

Before the wheel, moving big, heavy things was really tough. People had to lift them up or pull them around, which was really hard work.

The Sumerians thought of a super cool idea - a wheel! A wheel is round and can roll. It makes moving things so much easier.

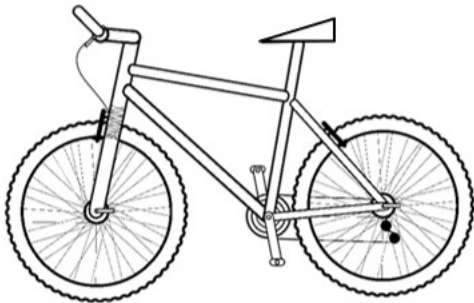
Why the Wheel is Important

The wheel is very important because it helps us in many ways. Imagine your cars, bikes, and even your truck. They all have wheels.

The wheel helps these things move quickly and smoothly. Without wheels, we couldn't have cars or bikes. The Sumerians did an amazing thing when they invented the wheel. We still use wheels every day!

Colour

Colour the objects with wheels.



Draw

Draw objects that have wheels.



Activity – Make a Wheel

Objective

What are we learning about?

To learn about the wheel by making one.

Materials

What do we need?

- ✓ Cardboard
- ✓ Scissors
- ✓ Pencil
- ✓ A round object to trace (like a small bowl or a large coin)
- ✓ Plastic straws



Method

How do we complete the experiment?

- 1) **Trace Circles:** Help each student to trace circles on the cardboard using the round object.
- 2) **Cut the Circles:** Assist the students in cutting out the circles using scissors. These circles will be their wheels.
- 3) **Punch a Hole:** Carefully help each student to make a hole in the center of their cardboard wheels using a pencil.
- 4) **Insert the Straw:** Guide the students to insert a plastic straw through the holes of the two wheels.
- 5) **Check Your Wheel:** Now students have their wheel! Encourage them to roll their wheels on the table or floor and observe how they move.



Results Answer the questions below

1) Draw your wheel below.

2) Did your wheel roll on the ground?

No

3) Did your wheel roll well on the carpet?

Yes

No

4) Is your wheel a perfect circle?

Yes

5) If your wheel was a triangle, would it roll?

Yes

No

6) Which wheel would roll the best?

Bumpy and Round

Smooth and Round

Smooth and Triangular

7) Draw a wheel that wouldn't roll very well.



Objects and Animals that Bounce

Objects That Bounce

Lots of things can bounce! Think about a rubber ball. When you drop it on the ground, it doesn't just stay there. It jumps back up! This is because it's made of a stretchy material that pushes back when it hits the ground.


Another object that can bounce is a balloon. Have you ever batted a balloon into the air and watched it bounce back down?

Animals That Bounce


Some animals can bounce too! Have you ever seen a kangaroo? They have strong back legs that push them off the ground, making them bounce forward. Frogs and rabbits do this too when they hop. They use their strong legs to push off the ground and bounce in the air.


Questions


Will the object bounce? Does the animal bounce?


	
Yes	No


	
Yes	No


	
Yes	No


	
Yes	No

	
Yes	No

	
Yes	No

	
Yes	No

	
Yes	No

	
Yes	No

Experiments – Testing How Bouncy Objects Are

Objective

What are we learning about?

The students will learn more about how and why objects bounce.

Materials

What do we need?

- ✓ Different types of balls: tennis ball, golf ball, soccer ball, basketball
- ✓ Measuring tape
- ✓ A hard flat surface (like a floor or a table)

Method

How do we complete the experiment?

- 1) Gather the students in a spacious area. Start with explaining what bouncing means, make sure everyone understands.
- 2) Show the students the different types of balls. Ask them to predict which one will bounce the highest.
- 3) Take the first ball, hold it at a certain height (for example, 1 meter) from the ground, and let it drop. Make sure all the students are observing.
- 4) Measure how high the ball bounces up with the measuring tape. Write down the result on a chart.
- 5) Repeat steps 3 and 4 with the other balls.
- 6) Compare the results. Ask the students if the balls bounced as they predicted.



Hypothesis

What do you think will happen?

Order how high you think each ball will bounce. Number them 1 for the highest and 4 for the lowest.

Soccer Ball

Tennis Ball

Basketball

Golf Ball

Results

What happened?

1) Write down the order in which ball bounced.

Soccer Ball**Tennis Ball****Basketball****Golf Ball**

2) Did you guess right? Explain.

3) Order the balls from the highest bounce to the lowest bounce. Draw the balls in the correct order.

HighestSecond HighestSecond LowestLowest

Rubber: The Bouncy Material

Why is Rubber Bouncy?

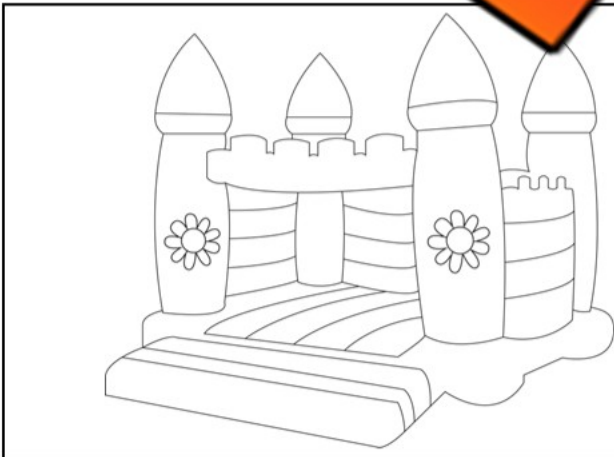
- 1) **Stretchy and Flexible:** Rubber is very stretchy and flexible. When you throw a rubber ball on the ground, it squishes a bit and then springs back to its normal shape. That's why it bounces back up!
- 2) **Strong:** Rubber is strong, so it doesn't break or crack easily. That means it can keep bouncing for a long time.

Rubber in Bouncy Things

Many things that bounce are made from rubber. Think about rubber balls, bouncy castles, and the soles of some shoes. All of these need to be bouncy, and rubber is perfect for that!

Colour

Colour the objects below



Draw

Draw objects that are made of rubber and that bounce



Sliding Animals and Objects

Objects that Slide

Objects can slide when they are pushed or pulled on a smooth surface. Here are some examples:

Toy slide: Slides are made of slippery plastic. You can put anything slippery on a slide and it will slide down.

Ice cubes: Ice cubes can slide on a table because they are slippery and smooth.

Books: If you push a book on a smooth table, it can slide.



Animals that Slide

Some animals slide around quickly or to escape from danger. Here are some examples:

Penguins: Penguins slide on ice when they are on snow or ice.

Snakes: Some snakes slide on the ground to move.

Otters: Otters love to slide down mud banks into the water.

Questions

Will the object slide? Does the animal slide?

1) Rocks on the ground	Yes	No	6) Penguins	Yes	No
2) Person on a slide	Yes	No	7) Snakes	Yes	No
3) Rubber band on a slide	Yes	No	8) Dogs	Yes	No
4) Rubber puck on a slide	Yes	No	9) Seals	Yes	No
5) Rubber puck on ice	Yes	No	10) Snakes	Yes	No

Draw

Draw 3 objects that will slide on pavement

--	--	--

Experiment – Testing If Objects Will Slide

Objective

What are we learning about?

The objective of this activity is to help students understand how and why some objects slide while others do not.

Materials

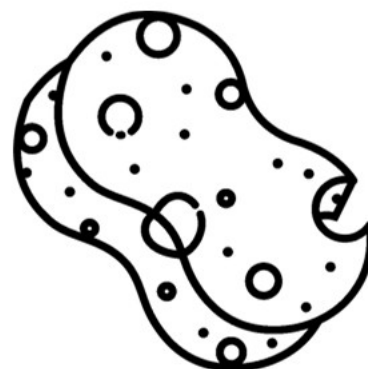
What do we need?

- ✓ Objects to test: toy boat, puzzle piece, board game piece and objects that do not slide: sponge, rough rock, stapler
- ✓ A rough surface (like a carpet)
- ✓ A small ramp (can be made from a sturdy piece of cardboard or a book).

Method

How do we conduct the experiment?

- 1) Gather the students in a circle around the table or floor area where you've set up the small ramp.
- 2) One by one, demonstrate how each object interacts with the ramp. Ask a volunteer to gently push the object along the ramp.
- 3) Observe together if the object slides down the ramp or if it stays put.
- 4) Once all the objects have been tested, ask the students to think about why some objects slid and others did not. Guide them to consider factors like the object's weight, shape, and material.
- 5) Next, try to slide the same objects on the carpet. Discuss whether all the same objects that could slide down the ramp could also slide on the carpet. Ask the students why this might be the case.



Hypothesis

What do you think will happen?

1) Do you think the object will slide on the ramp? Will it slide on the carpet?

On Ramp		
1) Stapler	Yes	No
2) Sponge	Yes	No
3) Board Game Piece	Yes	No
4) Puzzle Piece	Yes	No
5) Rock	Yes	No
6) Toy	Yes	No

On Carpet		
1) Stapler	Yes	No
2) Sponge	Yes	No
3) Board Game Piece	Yes	No
4) Puzzle Piece	Yes	No
5) Rock	Yes	No
6) Toy	Yes	No

Results

1) Did the object slide on the ramp? Will it slide on the carpet?

On Ramp		
1) Stapler	Yes	No
2) Sponge	Yes	No
3) Board Game Piece	Yes	No
4) Puzzle Piece	Yes	No
5) Rock	Yes	No
6) Toy	Yes	No

On Carpet		
1) Stapler	Yes	No
2) Sponge	Yes	No
3) Board Game Piece	Yes	No
4) Puzzle Piece	Yes	No
5) Rock	Yes	No
6) Toy	Yes	No

2) Order the objects from the one that slide the best to the worst.

BestWorst

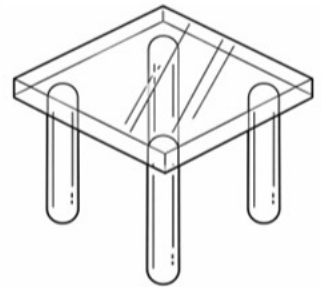
Smooth vs Rough Surfaces

Smooth Surfaces

Smooth surfaces, like a glass table, let objects slide easily. A toy car on a table moves fast!

Rough Surfaces

Rough surfaces, like a carpet, make it hard for objects to slide. A toy car on a carpet doesn't go far.

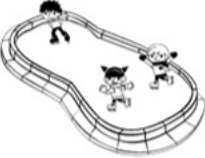


Friction


Friction is what happens when two objects rub against each other, slowing them down. Rough surfaces have more friction and slow objects down. Smooth surfaces have less friction and let objects move faster.

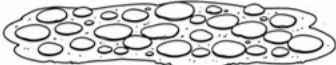
Directions


Look at the surface. Will an object travel fast or slow?


	
Smooth	Rough
Fast	Slow

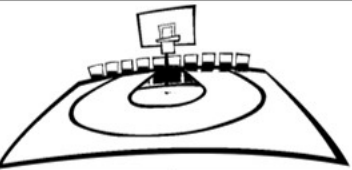
	
Smooth	Rough
Fast	Slow

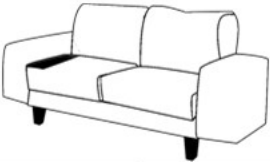
	
Smooth	Rough
Fast	Slow


	
Smooth	Rough
Fast	Slow

	
Smooth	Rough
Fast	Slow

	
Smooth	Rough
Fast	Slow

	
Smooth	Rough
Fast	Slow

	
Smooth	Rough
Fast	Slow

	
Smooth	Rough
Fast	Slow

Exit Cards

Cut Out

Cut out the exit cards below and have students complete them at the end of class

Name: _____

Mark

Is the statement true (T) or false (F)?

1) Smooth surfaces help objects move faster.	T
	F
2) A toy car moves faster on carpet than on a table.	T
	F
3) Grass is usually a smooth surface.	T
	F
4) Rough surfaces have more friction.	T
	F

Name: _____

Mark

Is the statement true (T) or false (F)?

1) Smooth surfaces help objects move faster.	T
	F
2) A toy car moves faster on carpet than on a table.	T
	F
3) Grass is usually a rough surface.	T
	F
4) Rough surfaces have more friction.	T
	F

Name: _____

Mark

Is the statement true (T) or false (F)?

1) Smooth surfaces help objects move faster.	T
	F
2) A toy car moves faster on carpet than on a table.	T
	F
3) Grass is usually a rough surface.	T
	F
4) Rough surfaces have more friction.	T
	F

Name: _____

Mark

Is the statement true (T) or false (F)?

1) Smooth surfaces help objects move faster.	T
	F
2) A toy car moves faster on carpet than on a table.	T
	F
3) Grass is usually a rough surface.	T
	F
4) Rough surfaces have more friction.	T
	F

Experiment – Friction Car Ramp

Research Question

Does more friction slow down a moving car?

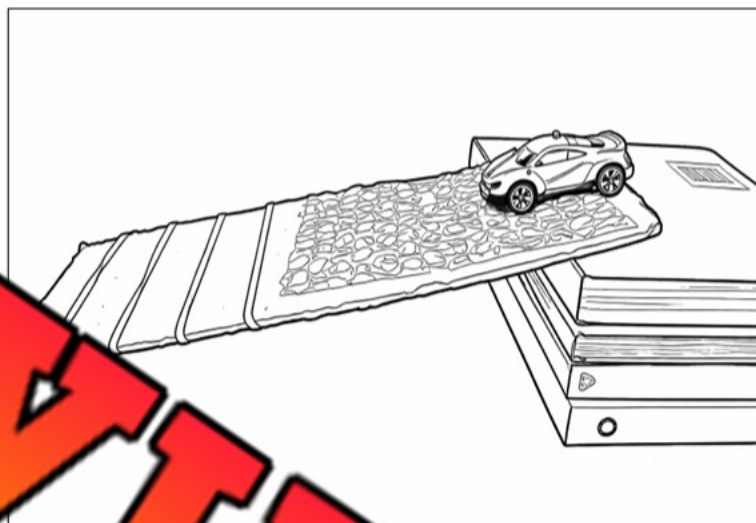
If we roll a car down a smooth ramp, will it go further than a bumpy ramp?

Materials

What do we need?

- ✓ Cardboard to make the ramps
- ✓ Books to rest on
- ✓ Toy car
- ✓ Glue

- ✓ Textured materials
 - Bubble wrap
 - Bread tabs
 - Rubber bands
 - Rice
 - Staples



Method

How do we complete the experiment?

- 1) Each group will make one ramp. The teacher can be helpful in creating a ramp that is smooth
- 2) Groups will need cardboard cut into a rectangle that will act as a ramp
- 3) Students can use some of the textured materials listed above to make a textured ramp. They can glue rice to the ramp, put staples in it, glue bubble wrap down, or wrap rubber bands around the ramp. Be creative!
- 4) Have each group test their ramps with their toy car
- 5) When all groups are finished, they can demonstrate their car going down the smooth ramp versus the textured ramp.
- 6) Mark how far the toy car travelled on the smooth ramp versus the textured ramp. Record your results on the back of the page.

Observations

What happened?

1) How did you make your textured ramp? Which materials did you use?

2) Did the car travel further on the smooth or textured ramp?

Smooth Ramp	Textured Ramp
-------------	---------------

Results

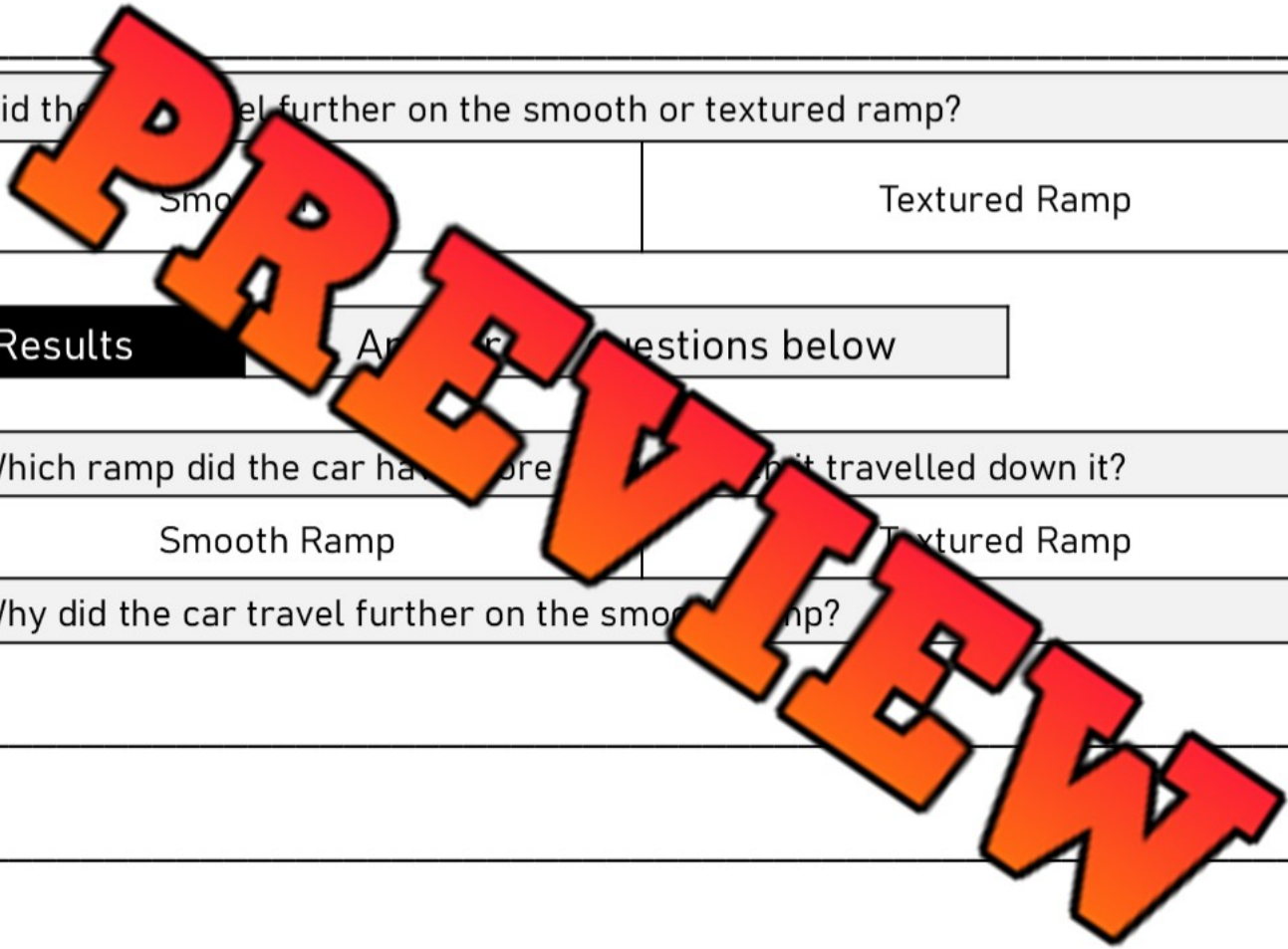
Answer the questions below

1) Which ramp did the car have more friction? Did it travelled down it?

Smooth Ramp	Textured Ramp
-------------	---------------

2) Why did the car travel further on the smooth ramp?


3) Draw a picture of the ramp you built.

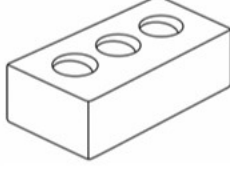



Roll or Slide?


Questions

If you drop the object on a slide, will it roll or slide down?


	
Roll	Slide

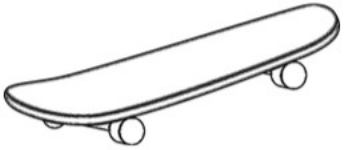
	
Roll	Slide


	
Roll	Slide

	
Roll	Slide

	
Roll	Slide

	
Roll	Slide

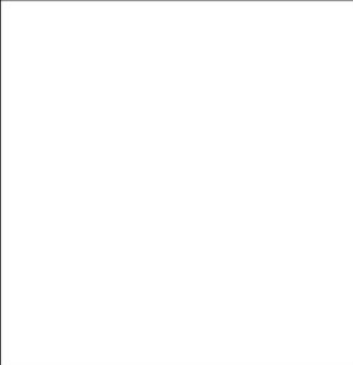



	
Roll	Slide

	
Roll	Slide

	
Roll	Slide

Draw

Draw 2 objects that will roll down the slide and 2 that will slide down

			
Roll	Roll	Slide	Slide

Experiment – Roll or Slide

Objective

What are we learning about?

The objective of this activity is to observe and understand the difference between objects that roll and objects that slide when placed at the top of a slide.

Materials

What do we need?

- ✓ _____
- ✓ Various objects such as a pencil, a ball, a toy car, a block, a book, etc.
- ✓ Observations chart. A simple chart with columns labeled "Object", "Roll", "Slide", "Observations".

Method

How do we complete the experiment?

- 1) **Discussion:** Begin by explaining to the students what rolling and sliding means. Make sure they understand that some objects roll because they are round and cylindrical, while others slide because they do not roll smoothly.
- 2) **Prediction:** Before you start the activity, ask the students to predict what they think each object will do. Will it roll or will it slide?
- 3) **Experiment:** One by one, place each object at the top of the slide and let it go. Allow the students to observe what happens.
- 4) **Record Observations:** After releasing each object, ask the students to record in their chart whether the object rolled or slid down the slide. They should also note any interesting observations, like if the object did a bit of both (rolled then slid) or if it didn't move at all.



Hypothesis

What do you think will happen?

1) Write the objects you will use for this experiment. Do you think the object will slide or roll down the slide? Circle both if you think it will do both.

	Roll	Slide
	Roll	Slide
	Roll	Slide

	Roll	Slide
	Roll	Slide
	Roll	Slide

Results

What happened?

1) Did the object slide or roll down the slide?

	Roll	Slide
	Roll	Slide
	Roll	Slide

	Roll	Slide
	Roll	Slide
	Roll	Slide

2) Did you guess right? Explain.

3) Which object moved the fastest? Which moved the slowest?

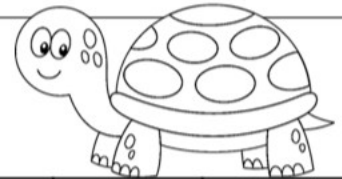
FastestSlowest

Speed

What is Speed?

Speed is how fast an object moves from one place to another. If your toy car goes from one end of your room to the other in a fast time, we say it has a high speed. But if a snail moves the same distance in a lot of time, we say it has a low speed.

A rabbit runs fast, so it has a high speed. A turtle walks slowly, so it has a low speed.



Direction: Is the object/animal fast or slow?

1) Turtle	Fast	Slow	6) Slug	Fast	Slow
2) Lion	Fast	Slow	7) A falling feather	Fast	Slow
3) Car	Fast	Slow	8) A frisbee flying	Fast	Slow
4) Snail	Fast	Slow	9) Shark	Fast	Slow
5) Bird	Fast	Slow	10) Fish	Fast	Slow

Draw

Draw 3 objects or animals in the fast or slow box.

Fast		

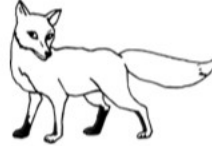
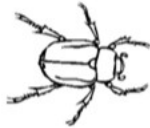
Slow		

Speed – Fast and Slow

Questions

Circle whether the animal is fastest or slowest

1) The fox is the _____.



Fastest
Slowest

2) The _____ is the _____.



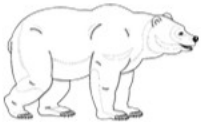
Fastest
Slowest

3) The frog is the _____.



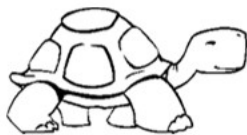
Fastest
Slowest

4) The cow is the _____.



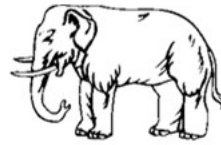
Fastest
Slowest

5) The crocodile is the _____.



Fastest
Slowest

6) The elephant is the _____.



Fastest
Slowest

7) The shark is the _____.

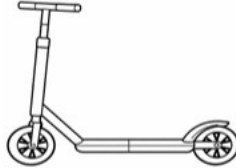


Fastest
Slowest

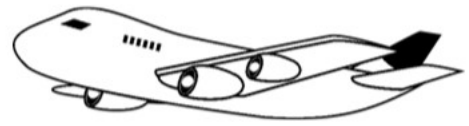
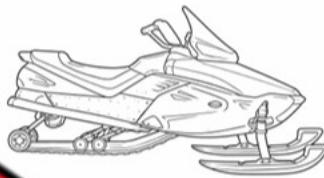
Questions

Order the vehicles from fastest (1) to slowest (3)

1)



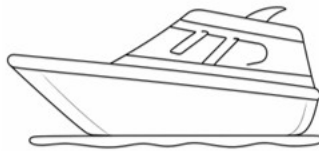
2)



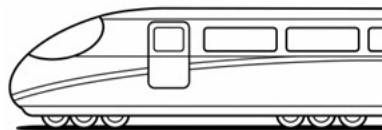
3)



4)



5)




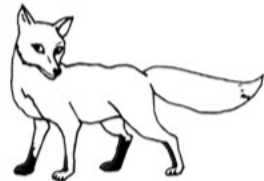
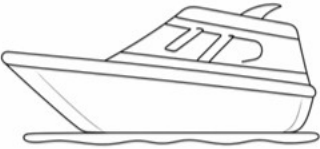





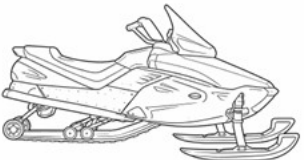





PREVIEW

Speed – Faster and Slower

Questions

Circle the relationship between column 1 and column 2

Column 1	Comparative Language Column 1 is ____ Column 2	Column 2
	<p>slower than</p> <p>faster than</p> <p>the same speed as</p>	
	<p>slower than</p> <p>faster than</p> <p>the same speed as</p>	
	<p>slower than</p> <p>faster than</p> <p>the same speed as</p>	
	<p>slower than</p> <p>faster than</p> <p>the same speed as</p>	
	<p>slower than</p> <p>faster than</p> <p>the same speed as</p>	
	<p>slower than</p> <p>faster than</p> <p>the same speed as</p>	
	<p>slower than</p> <p>faster than</p> <p>the same speed as</p>	





Exit Cards

Cut Out

Cut out the exit cards below and have students complete them at the end of class

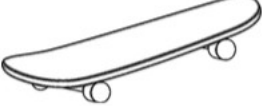



Name: _____

Order the objects from slowest to fastest.

			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

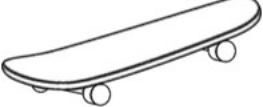



Name: _____

Order the objects from slowest to fastest.

			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Name: _____

Order the objects from slowest to fastest.

			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PREVIEW

Experiment – Racing Cars

Objective

What are we learning about?

To understand the concept of speed (how fast or slow something moves) by observing toy cars racing down a ramp.

Materials

What do we need?

- ✓ Four toy cars for each group.
- ✓ A board or book to act as a ramp.
- ✓ Something to prop up one end of the ramp, such as a stack of books.
- ✓ Marking tape to mark a starting and finishing line.



Method

How do we complete the experiment?

- 1) Start by explaining to the students what speed is (how fast or slow something moves).
- 2) Setup your ramp by propping one end of the board up on a stack of books. Make sure the angle of the ramp is safe for the cars to go down.
- 3) Mark a starting line at the top of the ramp and a finishing line at the bottom of the ramp.
- 4) Divide the students into groups of 4 and give each group 4 different toy cars.
- 5) Each student in the group will hold their car at the top of the ramp at the same time. On the count of 3, they will drop their car.
- 6) The students will observe which car reaches the finish line first and last. They will decide among themselves which car was the fastest and which was the slowest. Optional: take all the fastest cars in the class and do one race with them.
- 7) Have a discussion with the class about why they think some cars moved faster than others. This can lead to an introductory conversation about factors that can affect speed.

Observations

What happened?

1) Who had the fastest car?

2) Draw a picture of your car and the fastest car.

Your Car**Fastest Car****PREVIEW****Results**

Answer the questions below

1) Were the wheels bigger or smaller on the fastest car?

Bigger

Smaller

2) Was the car big or small?

Big

Small

3) Was the car heavy or light?

Heavy

Light

Describing Changes in Speed

How Do Objects Change Speed?

Objects such as vehicles can change their speed too. For example, a bicycle can go slow, medium, or fast. When we pedal lightly, the bike moves slowly. But if we pedal harder, the bike moves faster. So, we change the speed of the bike by how hard or softly we pedal.

How Do Animals Change Speed?

Animals can change speed too! Think about a pet dog. When a dog is resting, it doesn't move at all. Its speed is zero. But when it hears the dinner bell, it might get up and walk slowly. Then, it might get excited and start to run fast. This is how it changed its speed from slow to fast.



Directions

Write down how each object or animal move?

Driving a car

1) Driving up to a stop sign	Fast	Medium	Slow
2) Driving on the highway	Fast	Medium	Slow
3) Driving in a neighbourhood	Fast	Medium	Slow

A dog moving around

1) Chasing a chipmunk	Fast	Medium	Slow
2) Going for a walk with its owner	Fast	Medium	Slow
3) Sneaking up on a rabbit	Fast	Medium	Slow

A soccer ball in a game of soccer

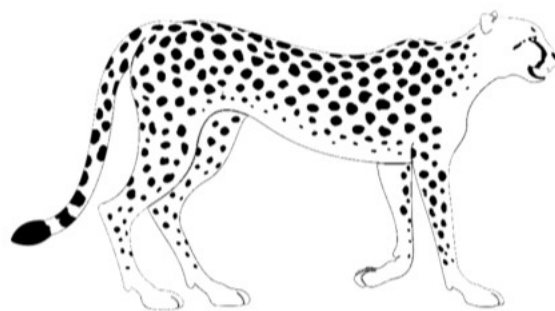
1) Being passed to a teammate	Fast	Medium	Slow
2) Rolling to a stop in the net	Fast	Medium	Slow
3) Being kicked into the net	Fast	Medium	Slow

Activity – Speed Detectives!

Objective

What are we learning about?

To understand and identify when an object or animal is changing its speed.



Materials

What do we need?

- ✓ Objects that can change speed
- ✓ A large, open space for running
- ✓ A video (or videos) of animals moving at varying speeds

Method

How do we complete the experiment?

- 1) Start by discussing what it means for an object or animal to change its speed. Recap that speed can change from slow to fast, or fast to slow.
- 2) First, use the objects you've gathered. Roll or move them from a slow speed and ask the students to raise their hands when they think the speed is changing.
- 3) Next, move to the large open space. Select one student to be the runner. Have the runner change their speed from slow to fast, or fast to slow, on your command. Have the rest of the students observe and signal when they notice the runner changing speed.
- 4) Now, move on to the videos. Show the students videos of different animals moving, pausing after each one to ask if the animal changed its speed in the video. Encourage them to describe when and how the speed changed.
- 5) Wrap up by reviewing what they learned about how the speed of objects and animals can change.


Name: _____

Unit Test - Movement

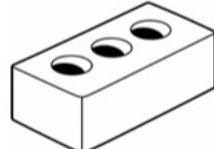
Part 1 Will the object roll?




Yes	No
-----	----




Yes	No
-----	----



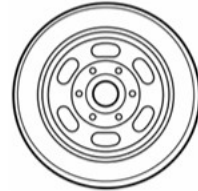
Yes	No
-----	----



Yes	No
-----	----




Yes	No
-----	----




Yes	No
-----	----

Part 2 Will the object bounce? Does it have a bumpy surface?




Yes	No
-----	----



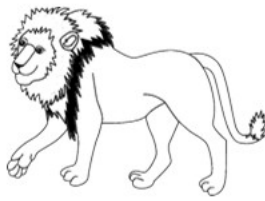
Yes	No
-----	----



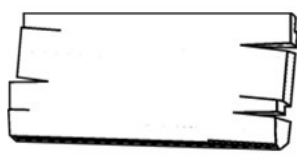
Yes	No
-----	----



Yes	No
-----	----



Yes	No
-----	----



Yes	No
-----	----

Part 3

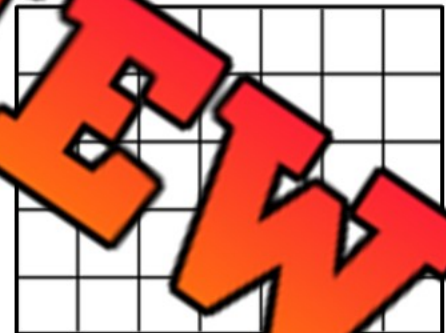
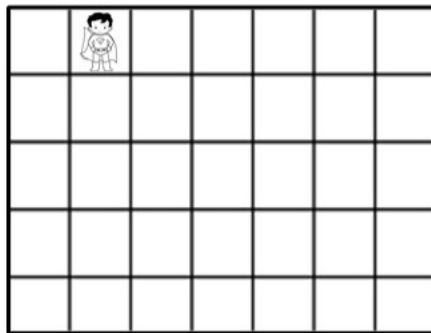
Will the object slide? Does the animal slide?

1) Rocks on the ground	Yes	No
2) Person on a slide	Yes	No
3) Rubber band on a slide	Yes	No
4) Rubber puck on ice	Yes	No
5) Penguin	Yes	No
6) Snake	Yes	No
7) Dog	Yes	No
8) Seals	Yes	No

Part 4

Follow the path you think the child will end up

1) Down 2 steps, right 3 steps, down 1 step, left 2 steps, up 3 steps, right 4 steps



Part 5

Is the surface smooth? Will an object move fast or slow?

Yes	No
Fast	Slow

Yes	No
Fast	Slow

Yes	No
Fast	Slow