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.

Thank you for shopping with us. Please let us know if you have any questions at:

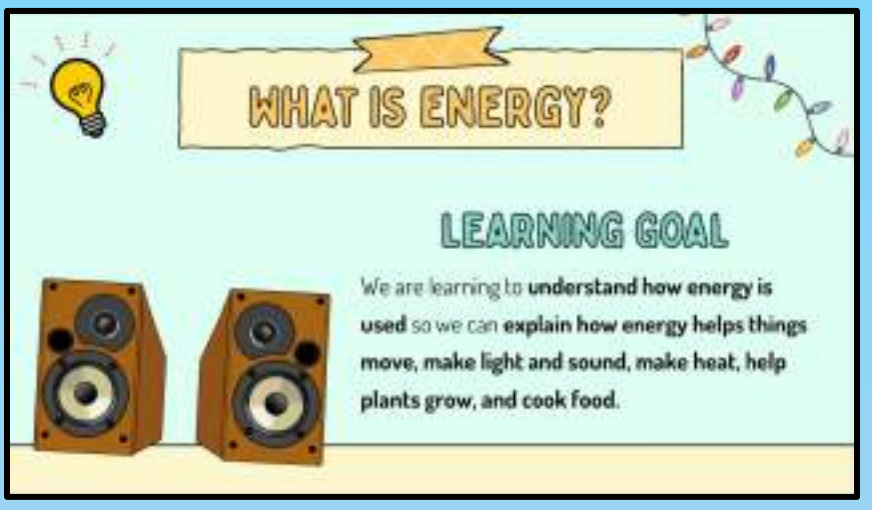
rob@supersimplesheets.com

Google Slides Lessons Preview

Alberta Science Curriculum
Energy – Light and Sound – Grade 2

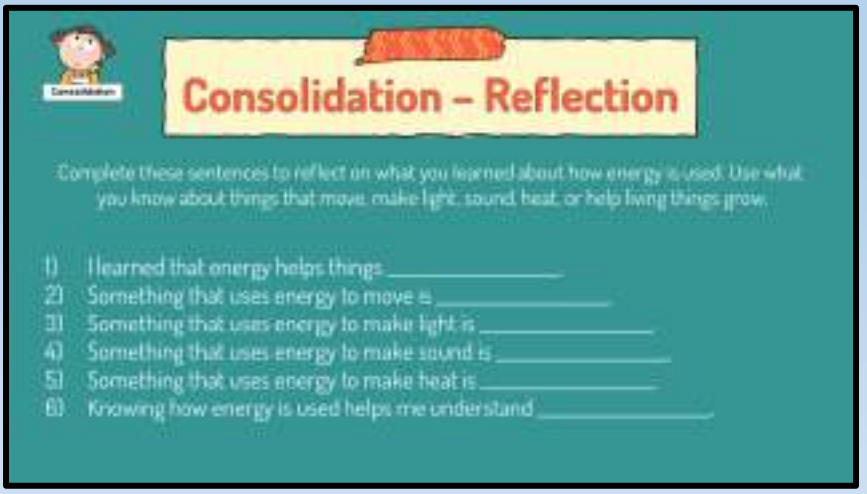
3-Part Lesson Format

Part 1 – Minds On!
- Learning Goals
- Discussion Questions
- Quotes
- And More!



Part 2 – Action!
- Writing
- Matching
- Drag and Drop
- Drawing
- And More!

Part 3 – Consolidation!
- Exit Cards
- Quizzes
- Reflection
- And More!



Alberta Science Curriculum
Energy – Light and Sound – Grade 2

Alberta Science Curriculum

Energy – Light and Sound – Grade 2

Workbook Preview

Grade 2 – Science Unit

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

Guiding Question: How can the suitability of materials be determined for specific purposes?

	Learning Outcome - Students investigate the behaviours of light and sound.	**Pages**
E2.1	Sound behaves in various ways, including travelling in a straight line from its source transferring from one object to another bouncing off a surface (reflection/diffusion) stopping in an object (absorption)	6-12, 17-25
E2.2	Sound is produced by vibrations of objects. Vibration is a rapid back-and-forth movement.	16-21
E2.3	Sources of sound can be natural or human-made, such as musical	-15, 34
E2.4		6-28
E2.5	Properties of materials that affect the production and behaviour of sound include size, texture, shape, type	2-25, 9-33, 35-38
E2.6	Sources of light include: the Sun, electricity, fire, some plants and animals	40-55, 61-63, 85-86
E2.7	Light behaves in various ways, including: • travelling in a straight line from its source • bouncing off a surface (reflection) • bending as it travels from one material to another (refraction) • splitting into colours (dispersion)	56-58, 76-84
E2.8	Light travels through objects that can be seen through (transparent)	64-65
E2.9	The path of light is affected by mirrors, prisms, and water. The path of sunlight can be affected in a variety of ways by natural objects, such as leaves, trees, bodies of water, mountains	66-75
Computer Science:		
CS.1	Students apply creativity when designing instructions to achieve a desired outcome.	59-60, 87-92

NAME: _____

LIGHT AND SOUND

Name: _____ 6

Curriculum Connection
E2.1

What is Energy?

Energy is used to make the things you see or do happen.

- Energy is used to move things
- Energy is used to make light
- Energy is used to make sound
- Energy is used to make heat
- Energy is used to make things grow
- Energy is used to cook your food

Draw Draw pictures to represent ways energy is used

Something Moving	Something Making Light	Something Making Sound
Something Making Heat	Something Growing	Food Being Cooked

Name: _____ 8

Curriculum Connection
E2.1

Energy or Not ?

Energy or Not?	Colour the pictures that show energy being used

Name: _____ 10

Curriculum Connection
E2.1

Sound Energy

Colour Colour anything that makes sound energy

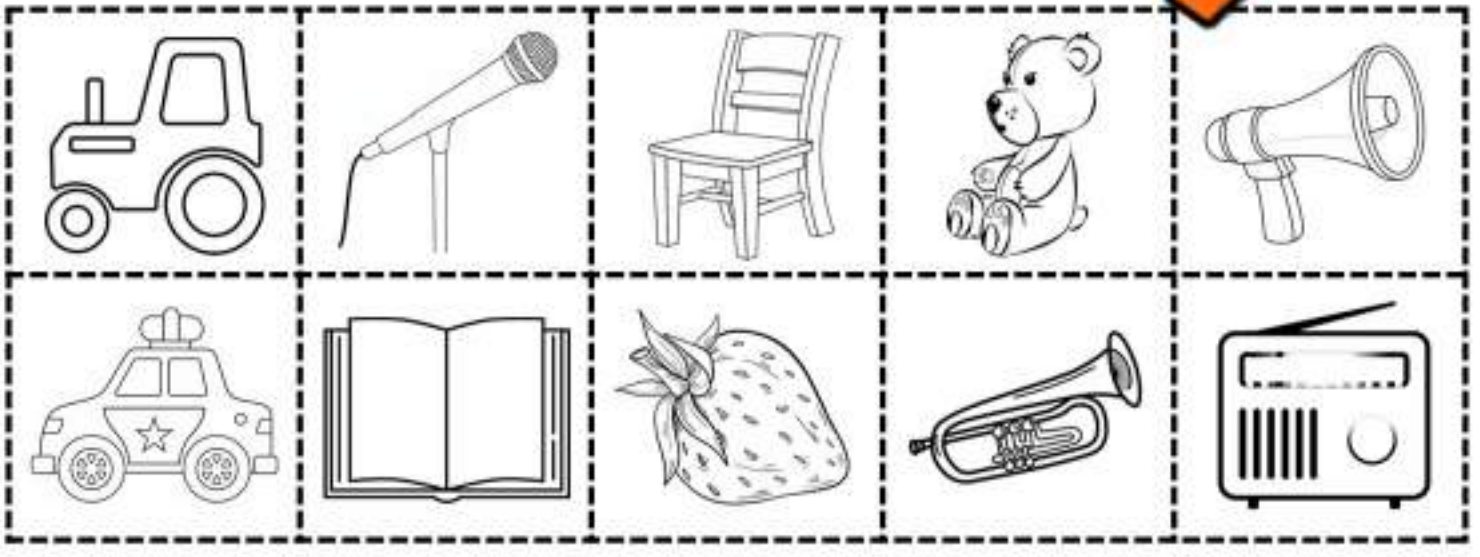
Name: _____ 11

Curriculum Connection
E2.1

Sound Energy Sort

Questions Cut and paste the pictures putting them in the right category

Sound Energy	Not Sound Energy



Name: _____ 12

Curriculum Connection
E2.1

Activity – Guess the Sound

Research Question

What are we testing?

Can you tell the difference between different types of sounds?

Materials

What do we need for our experiment?

- Comp
- Sp

Procedure

w do mplete the activity?

1. You could find your o s to for students to guess. An easier option is to search on YouTube the ne"
2. Have students give their answers or wri down below

Recording

Write what sound you he

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

Name: _____ 13

Curriculum Connection
E2.3

Artificial vs Natural Sound

Artificial vs Natural Sound

Sound comes from vibrations made by artificial or natural sources. Artificial sounds come from anything human-made. Natural sounds come from nature – the living and non-living things humans did not make.

Examp f Natural Sounds
- Th f a bee
- W
- ti
- es or ng
- Heartb
- Thunder

Examples of Artificial Sounds
- A car starting
- A horn
- A vacuum cleaner
- A musical instrument
- Police siren
- Speaker

Yes/No Is the a es

1) Is sound caused by vibrations?	Yes	No
2) Are natural sounds made by human ma gs?	Yes	No
3) Do airplanes make natural sounds?		No
4) Do dogs make natural sounds?		No
5) Are artificial sounds made by human-made things?		

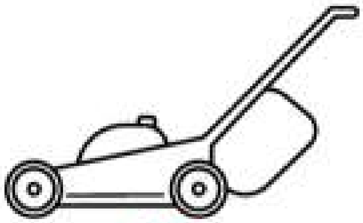
Draw Draw examples of artificial and natural sounds

Natural Sounds	Artificial Sounds

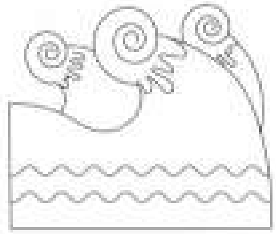
Name: ____________________ 14

Curriculum Connection
E2.3

Directions Does the picture make natural or artificial sound?

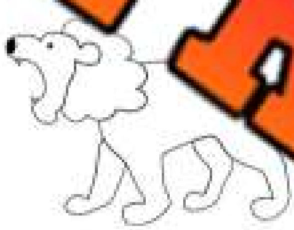


Artificial | Natural



Artificial | Natural

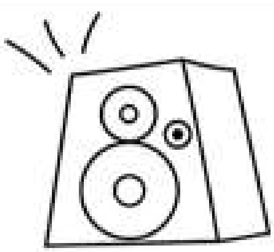
Artificial | Natural



Artificial | Natural

Artificial | Natural

Artificial | Natural

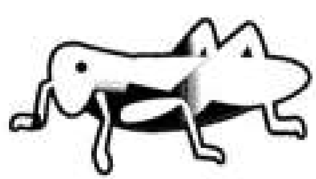


Artificial | Natural

Artificial | Natural

Artificial | Natural

Artificial | Natural



Artificial | Natural

Artificial | Natural

Curriculum Connection
E2.3

Exit Cards

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

Name: _____ Mark

List examples of artificial and natural sounds

Artificial	Natural

Name: _____ Mark

List examples of artificial and natural sounds

Artificial	Natural

Name: _____ Mark

List examples of artificial and natural sounds

Artificial	Natural

Name: _____ Mark

List examples of artificial and natural sounds

Artificial	Natural

Name: _____ 16

Curriculum Connection
E2.2

Making Sounds

How Sound Is Made

Sound is made when an object vibrates. Vibrations often happen when there is movement with an object, like when we clap our hands. The vibrations made by the moving objects send sound waves into our ears.

Examples of Sound Vibrations

- When [illegible] chair, the ground and chair move, making vibrations
- [illegible] you talk [illegible] cal cords move in your throat, making vibrations
- When you [illegible] skin vibrates up and down
- When you pl[illegible] ring [illegible] it will vibrate up and down

Yes/No Is the [illegible]es

1) Do vibrations make sound wave[illegible]	Yes	No
2) Do our ears hear sound waves?	Yes	No
3) If you move objects, do they sometimes ma[illegible]s?	[illegible]	No
4) If things don't move, do they make vibrations?	[illegible]	No
5) Can you talk without moving anything?	[illegible]	[illegible]

Draw Draw examples of objects moving and making vibration[illegible]

Name: _____ 17

Curriculum Connection
E2.1, E2.2

The Journey of Sound

The Journey of Sound

When a sound is made by a vibration, it starts a journey. It moves in a straight line through air, liquids, or solids. It may bounce off an object or be absorbed by an object. Check out the journey of sound below.

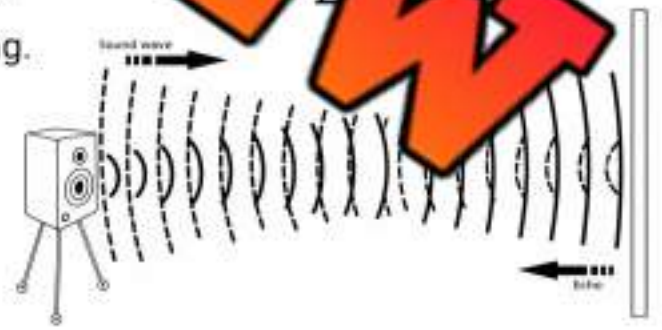
1) Stra

Sou a ht line from its source, the place where it is made. It's like when y yell t d across the playground, the sound travels in a straight line from you iend.

2) Transfer

Sounds move from one thing not you put a cup on your ear and your friend talks into the other a stri to it. The sound transfers through the string and into your c

Sound is always moving through things. M e, o aves move through the air. But it can also move through water in a pool or through objects like string.



3) Bounce - Reflect

Sounds can even bounce off things. When you shout in a big empty room or a mountain, your sound bounces back to you. That's called an echo!

4) Stop - Absorb

Sometimes sounds get stopped by things. If you yell into a pillow, the sound doesn't go very far. The pillow absorbs, or soaks up, the sound.

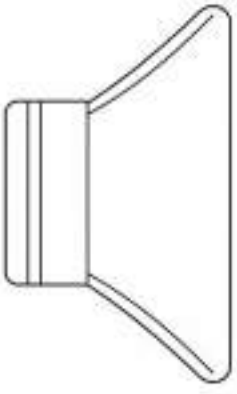
Name: _____ 18

Curriculum Connection
E2.1, E2.2

Question How does sound move in the ways below?

Straight Line	
Transf	
Bounce or Reflect	
Stop or Absorb	

Draw Draw a diagram of an echo. Use one colour fo so ng towards the wall and a different colour for it bouncin



Curriculum Connection
E2.1, E2.2

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) Sound can only travel through air, not solids.	T / F
2) An echo happens when sound comes back to you.	T / F
3) Soft objects help sound travel farther.	T / F
4) Sound starts when something moves or shakes.	T / F

Name: _____ Mark

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

1) Sound can only travel through air, not solids.	T / F
2) An echo happens when sound comes back to you.	T / F
3) Soft objects help sound travel farther.	T / F
4) Sound starts when something moves or shakes.	T / F

Name: _____ Mark

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

1) Sound can only travel through air, not solids.	T / F
2) An echo happens when sound comes back to you.	T / F
3) Soft objects help sound travel farther.	T / F
4) Sound starts when something moves or shakes.	T / F

Name: _____ Mark

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

1) Sound can only travel through air, not solids.	T / F
2) An echo happens when sound comes back to you.	T / F
3) Soft objects help sound travel farther.	T / F
4) Sound starts when something moves or shakes.	T / F

Name: _____ 20

Curriculum Connection
E2.1, E2.2

Experiment – Light Maze

Research Question

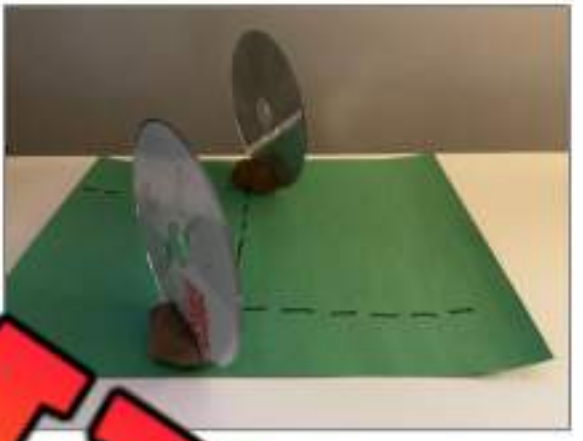
What are we learning more about?

Light travels in straight lines and it reflects on certain materials. Can we reflect light off multiple surfaces?

Materials

What do we need for our experiment?

1) [illegible]s/DVDs or [illegible]ials th[illegible]ight well
2) Play doug[illegible] to ho[illegible]rrors up
3) Marker
4) Paper to draw the maze
5) A flashlight



Method

How do we complete the e[illegible]im

1) Make a maze using the paper and markers. Make two turns if you have two mirrors and 3 turns if you have 3 mirrors
2) Make a ball of play dough for the mirror to sit in
3) Put the mirrors on the corners of the turns
4) Angle the mirrors so the light will reflect off one another
5) Turn off the lights so you can test your light maze. You might need to adjust the position of your mirrors in order for the light to travel through the maze.

Name: _____ 21

Curriculum Connection
E2.1, E2.2

Observations | What happened?

What happened? Write down what you saw as you tested your mirrors.

Results | Answer the questions below

1) Does light bend when it reflects off a surface?

2) Draw a diagram of your light maze. Label the mirrors and the path of light.

Name: ______________________

Curriculum Connection
E2.1, E2.5

Sound Reflecting Materials

Reflecting and Absorbing Sound

Sound waves will either be reflected or absorbed by objects they touch. Soft materials absorb sound waves. Hard materials reflect sound waves.

Reflect S[illegible]

Have yo[illegible]ard your voice echo? That's beca[illegible] is a sound, bounced off a har[illegible] sur[illegible] to you. This is called reflection!

Many mate[illegible] refl[illegible] just like a bouncy ball. Here are some examples:

- Hardwood floors: They [illegible] they bounce the sound back.
- Stone or brick walls: These are a[illegible], and [illegible]make great sound reflectors.
- Glass windows: Sound can't go through g[illegible] so it [illegible] That's why you can hear an echo if you shout towards a w[illegible]

Absorb Sound:

Now, imagine you throw a bouncy ball into a bag of cotton. It won't bounce back, will it? Some materials absorb, or soak up sound. They are like soft pillows for sound.

- Carpet or rugs: They are soft and fluffy, so they can grab onto the sound and stop it from bouncing back.
- Curtains: These are made of soft material that soaks up sound.
- Foam or sponge: They are super good at soaking up sound. That's why you find foam in places where we want less noise, like recording studios.

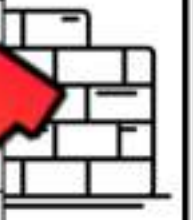
Name: _____ 23

Curriculum Connection
E2.1, E2.5

Question Which materials absorb sound, and which reflect sound?

Absorb or Refl ...rcle if the material/object will reflect or absorb sound

1) Brick wa	Absorb	Reflect
2) Carpet	Absorb	Reflect
3) Curtains	...sorb	Reflect
4) Window	...or	Reflect
5) Trees	Absc	Reflect
6) Tile floor	...	...ect
7) Pillow	A...	...ct
8) Book	Absorb	
9) Car door	Absorb	Re...
10) Soft teddy bear	Absorb	Re...ct



Questioning Write two questions you have about sound

1)	
2)	

Name: _____ 24

Curriculum Connection
E2.1, E2.5

Experiment – Soundproof Room

Can you create a soundproof box? What materials will you use? How will you layer the materials?

Materials

What do we need for our experiment?

1) A s… a phone could work or a small speaker
2) 1… per gr… eeds to be large enough that the speaker can fit inside. A shoeb… rk.
3) Soundproofi… teria… f… m, bubble wrap, clay, sponges, felt, cotton balls, newspaper, p… es, co… fleece, etc.
4) Tape, glue, scissors to m… the…

Method

How do we complete the experi…

1) Modify your box so that it has one opening tha… ker … into. You need to ensure the box can open up, just like a so… of … or.
2) Soundproof your box by adding your materials inside. Lay… …ls but leave room for the speaker to fit inside.
3) Test your soundproof box by putting the speaker inside. Turn on the speaker and choose a song to play. You could use a consistent noise, like rainfall or dark noise.
4) Start at volume 1 and listen for the sound. Make sure to keep it the same distance away from the speaker.
5) Continue to adjust the volume, making note of when you hear the sound. If you can always hear the sound, you could change the test slightly. You could keep the sound at level 10 but compare how loud it sounds in each box.

Name: _____ 25

Curriculum Connection
E2.1, E2.5

Plan | Which materials will you use?

1) What materials will you use for your soundproof room/box?

2) How [illegible] sound from escaping out of the door?

3) Draw a diagram of the box, [illegible] and how you will organize them.

Name: _____ 26

Curriculum Connection
E2.4

Pitch, Duration, Volume

What is Pitch, Tone, and Volume?

You probably have noticed that not all sounds are the same. Our voices sound different because we speak with different pitches, tones, and at different volumes.

Pitch

- ✓ High-pitched - short waves and sound like a bird chirp or whistle blowing
- ✓ Low-pitched - long waves and sound like a bass guitar or a tuba

Duration

The duration of sound is how long the sound lasts. A clap is short and quick, the ring of a bell can last a few seconds. Musicians use different durations in their music, they might play a note for a short time or a long time.

Volume

The volume of sound is how loud it is. When you whisper, the volume is low.

Try This Use your voice to say the following sentences in different pitches, durations, and volumes

Sentence – Say...	Pitch/Tone/Volume
1) "Hello, how are you?"	Say in High Pitch and Low Pitch
2) "We won the game!"	Say in Low Volume and High Volume
3) Say your name	Say using a long and short duration

D U R A T I O N L O W C L A P I T C H Z
V O L U M E H I G H L O N G N U H M W S
H U Q X I G T M T A T S T S H O R T Z N
F E K X J R K U R U E D O B F G O D S P
W I G Z L O W E V U H P N V L Y H I B B

Pitch	Duration
Low	Volume
High	Long
Short	Clap

Name: _____ 27

Curriculum Connection
E2.4

Experiment – Testing Pitch With Bottles

Research Question — What are we learning about?

If we fill 3 glass bottles with water, one with just a bit of water, one half full, and one almost ful[illegible] we hear different pitched sounds?

Mate[illegible] will need

- 3 glass bott[illegible]ps
- Jug of water
- Food colouring
- Metal utensil

Procedure — How to do the experiment

1) Make coloured water by adding food colouring to the jug o[illegible]
2) Pour just a small amount of water into glass #1
3) Fill glass #2 half full of water
4) Fill glass #3 full of water
5) Tap the side of the first glass and listen to the sound. Was it a high pitch, low pitch, or medium pitch?
6) Repeat the step above for glass number 2 and 3. Record what pitch you hear.

Name: _____ 28

Curriculum Connection
E2.4

Observations | What happened?

1) Which glass had the highest pitch? Which had the lowest pitch? Which was in between?	
Glass	**Pitch – Highest, Medium, Lowest**
ss # 1	
Gl #	
2) When you added w the	et higher or lower?
Higher	er
3) Could you play music using the differ lasse utensil?	
Yes	

Diagram | Draw a picture of the 3 glas

Curriculum Connection
E2.6

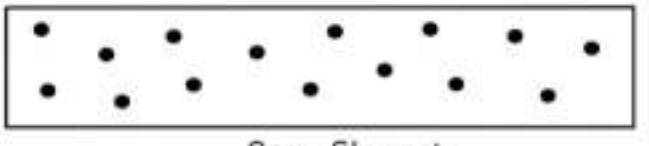
Sound Travels Through Matter

Sound Travels Through Matter

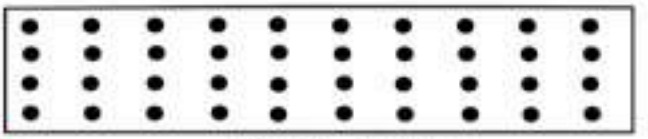
Sound waves need something to travel through to get to our ears. Sound waves can move through solids, liquids, and gases.

Gases

Most of t[illegible] we hear trave[illegible] thro[illegible] to [illegible]. Sound vibration[illegible] wl[illegible] through the air. [illegible]ticles in the air are farther [illegible]a[illegible] it takes the waves more ti[illegible] pass on from one particle to another.



Gas - Slowest



Liquid - Medium

Fastest

Liquids

Sound travels through water. If you are underwater, you [illegible]he[illegible] waves travel through the water to your ears. Since the particles are closer together, the sound travels faster than in the air.

Solids

Some sounds we hear travel through solids. If you put your ear on the table and someone taps their pencil on the table, you can hear the tapping through the table. These sound waves travel very fast because the particles are so close together that the sound vibrations can travel quickly from particle to particle.

Name: _____ 30

Curriculum Connection
E2.6

Draw Draw the particles in solids, liquids, and gases

Gas - Slowest

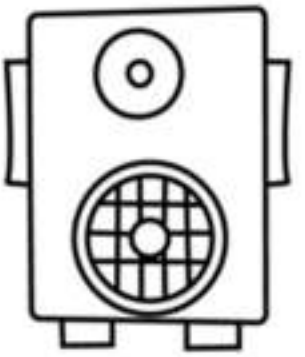
Liquid - Medium

Solid - Fastest

Yes/No Is the answer yes or no?

1) Does sound travel through matter?	Yes	No
2) Does sound travel in space where there is no m	s	No
3) Does sound travel faster in air than liquids?		No
4) Does sound travel faster in solids than air?		No
5) Can you hear sound underwater?	Yes	No

Colour Colour the sound pictures



Curriculum Connection
E2.5

Exit Cards

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

Name: _____ Mark ☐

Match how sound moves in each state of matter.

Gases	☐	☐ Sound moves faster than air because particles are closer.
Liquid	☐	☐ Sound moves very fast because particles are tightly packed.
Solid	☐	☐ Sound moves slow because particles are far apart.

Name: _____ Mark ☐

Match how sound moves in each state of matter.

Gases	☐	☐ Sound moves faster than air because particles are closer.
Liquid	☐	☐ Sound moves very fast because particles are tightly packed.
Solid	☐	☐ Sound moves slow because particles are far apart.

Name: _____ Mark ☐

Match how sound moves in each state of matter.

Gases	☐	☐ Sound moves faster than air because particles are closer.
Liquid	☐	☐ Sound moves very fast because particles are tightly packed.
Solid	☐	☐ Sound moves slow because particles are far apart.

Name: _____ Mark ☐

Match how sound moves in each state of matter.

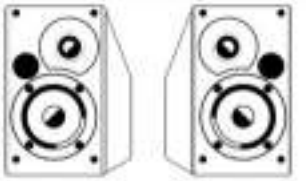
Gases	☐	☐ Sound moves faster than air because particles are closer.
Liquid	☐	☐ Sound moves very fast because particles are tightly packed.
Solid	☐	☐ Sound moves slow because particles are far apart.

Name: _____ 34

Curriculum Connection
E2.3

Sound Recording

What is Sound Recording?



We can record sounds using sound-recording devices. These devices turn sound waves into electric signals that can be saved. A speaker turns electric signals back into sound waves that we can hear.

We u[illegible]und-recording devices to save music, record people talking, and save sou[illegible]eed. Once they are recorded, we can play them when we need to.

S[illegible]d Rec[illegible]ces

- Micr[illegible]
- Phones
- Voice recorder

Sound Playback Devices

- Speakers
- Headphones
- TV/Computer/Radio

Draw Draw a sound recorder[illegible] a sou[illegible]y[illegible]device

Sound Recording Device	**Sound Playback Device**

Word Scramble Word Bank: Sound, Device, Play, Speaker, Save, Record

SUNOD		SEAKPER	
DCIEVE		PALY	
SVAE		ROCRED	

Name: _____ 35

Curriculum Connection
E2.6

Musical Instruments – Different Sounds

Sound of Musical Instruments

Do you know why different instruments make different sounds? It's because of their size, shape, and the kind of material they are made from. Let's find out how!

Brass Ins

Big i ik and small instruments like trumpets are called brass instrum ts. Th e fr m brass. Brass is a hard and smooth material. When you blow into t rume lips buzz, and it makes a sound. The sound gets louder as it co nt.

Stringed Instruments

Instruments like violins, guitars, and s are ed instruments. They have strings. When you pull or push th gs, th and make a sound. The body of the instrument make loude

Woodwind Instruments

Flutes, clarinets, and saxophones are called woodwind instrum nts. w into them and cover or uncover holes to make different sounds. These ins uments can make light or deep sounds.

Percussion Instruments

Drums, tambourines, and cymbals are called percussion instruments. You make sound by hitting or shaking them. When you hit a drum, the drum shakes, making sound waves. Bigger drums make louder sounds.

Name: _____ 36

Curriculum Connection
E2.5

List Provide examples of instruments that belong to each category

Brass	Stringed	Woodwind	Percussion

Multiple Choice best

1) What instrument uses a bow?	[illegible]	Flute
2) What instrument uses a mouthpiece?	Tr[illegible]	Drum
3) What instrument uses strings?	[illegible]	[illegible]axophone
4) What instrument is a percussion?	Drums	[illegible]
5) What instrument is hit?	Tuba	Drum
6) What instrument has holes?	Cello	Flute
7) What instrument can be strummed?	Guitar	Trombone
8) What instrument can be plucked?	Trumpet	Violin
9) What instrument can be shaken?	Tambourine	Tuba
10) What instrument is a woodwind?	Saxophone	Violin

Name: _____ 37

Curriculum Connection
E2.5

Activity- Guess the Sound

Research Question

What are we testing?

Can you tell the difference between different musical instruments?

Materials

What do we need for our experiment?

- Comp
- Sp

Procedure

e co e the activity?

1. You could find you s or l instruments for students to guess. Or, as an easier option: se (YouT the Sound Musical Instruments"
2. Have students give their answers wri m down below

Recording

Write what musical in nt yo

1)	
2)	
3)	
4)	
5)	
6)	
7)	
8)	
9)	
10)	

11)	
12)	
13)	
14)	
15)	
16)	
17)	
18)	
19)	
20)	

Name: _____ 39

Sound Energy – Activities

Word Search

Find the words from the word bank

Sound	Energy	Hear	Drum	Noise
Guitar	Engine	Speaker	Radio	Phone

Word Scramble

Unscramble the words from the word bank

SUNOD		EGNREY	
SEAPKER		EGNNIE	
GTAIUR		NIOES	
POHNE		HAER	
DRMU		RIDAO	

Name: _____ 42

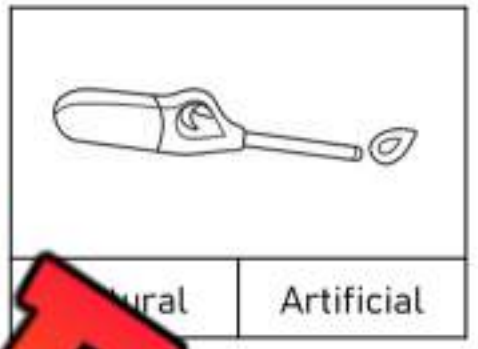
Curriculum Connection
E2.6

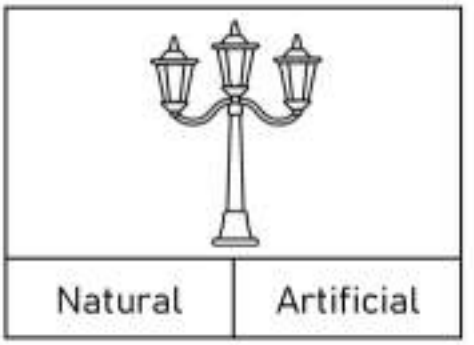
Natural and Artificial Light

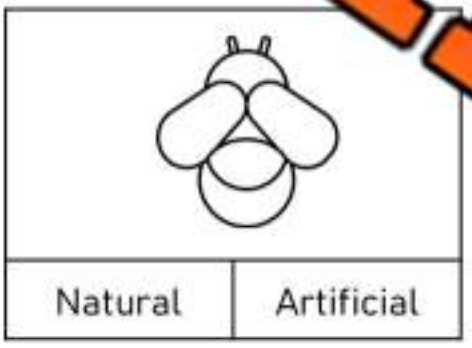
Natural light is energy made without humans. Artificial light is made by us.

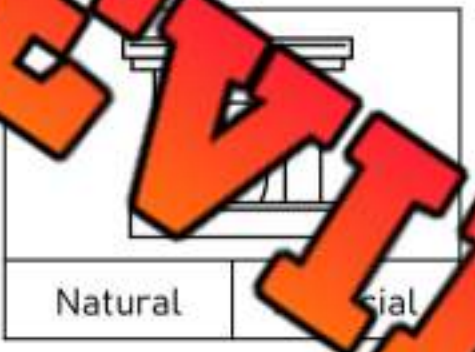
Natural or Artificial Circle whether the picture is natural or artificial light

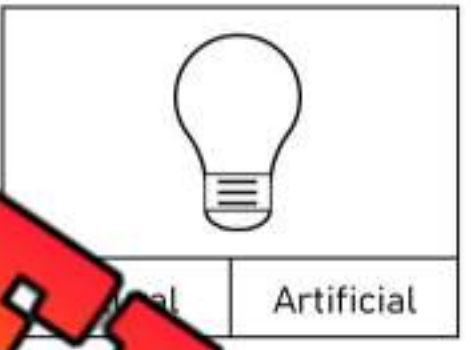

Natural | Artificial

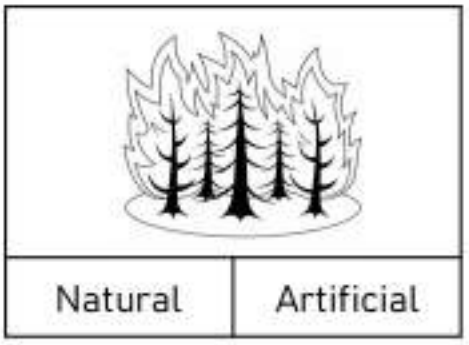

Natural | Artificial

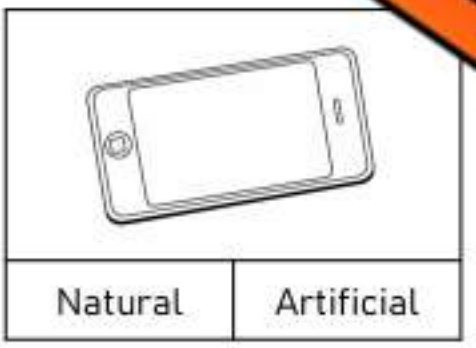

Natural | Artificial

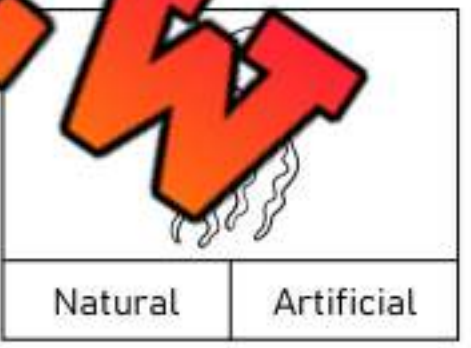

Natural | Artificial

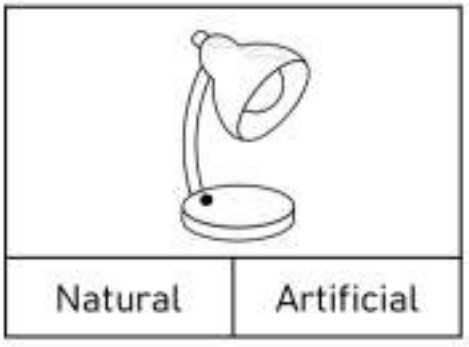

Natural | Artificial

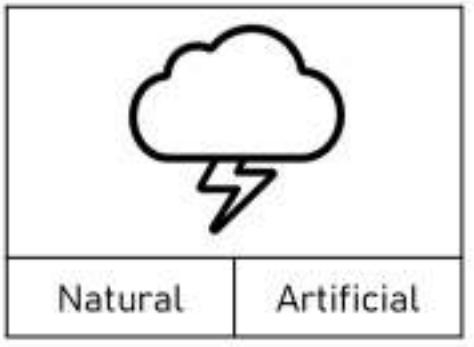

Natural | Artificial

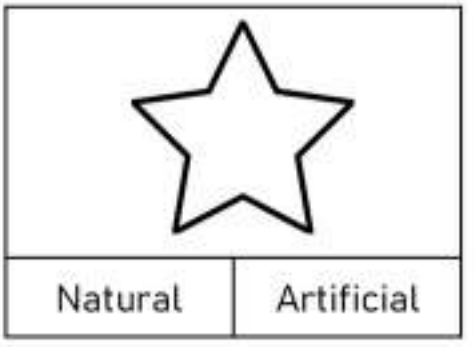

Natural | Artificial


Natural | Artificial


Natural | Artificial


Natural | Artificial


Natural | Artificial


Natural | Artificial

Name: _____ 43

Curriculum Connection
E2.6

Light Energy

Fill in the Blanks

What is the missing word?

1. Light energy is energy we can _____.
see/feel

2. A TV ... ff _____ energy.
light/heat

3. The bigge... f l... t energy is the _____.
moon/sun

4. At night, we can u... _____ for light energy.
...ght

5. A computer gives us _____ light energy.
natural/hum... ade

Word Search

Find the words from the wor...

X	H	A	H	J	H	V	W	T	B	L	E	H	I	X	Q	Q	T
F	G	O	E	W	G	H	K	H	V	Q	M	V	Z	I	O	T	X
I	H	L	Y	F	C	A	X	Y	A	S	O	I	G	J	J	T	U
R	K	U	K	G	U	A	C	H	A	H	V	S	U	Z	H	E	N
E	U	A	M	Y	C	R	N	D	W	A	E	Y	W	G	O	N	A
X	S	D	X	A	F	P	D	D	C	N	M	E	I	N	S	E	T
F	K	I	K	X	N	E	R	A	L	T	E	L	F	P	U	R	U
F	I	R	E	W	O	R	K	F	N	E	N	B	H	U	S	G	R
V	T	Q	H	W	I	I	D	R	A	S	T	P	K	K	U	Y	A
U	H	C	G	T	F	M	N	N	S	T	A	R	T	R	N	L	L

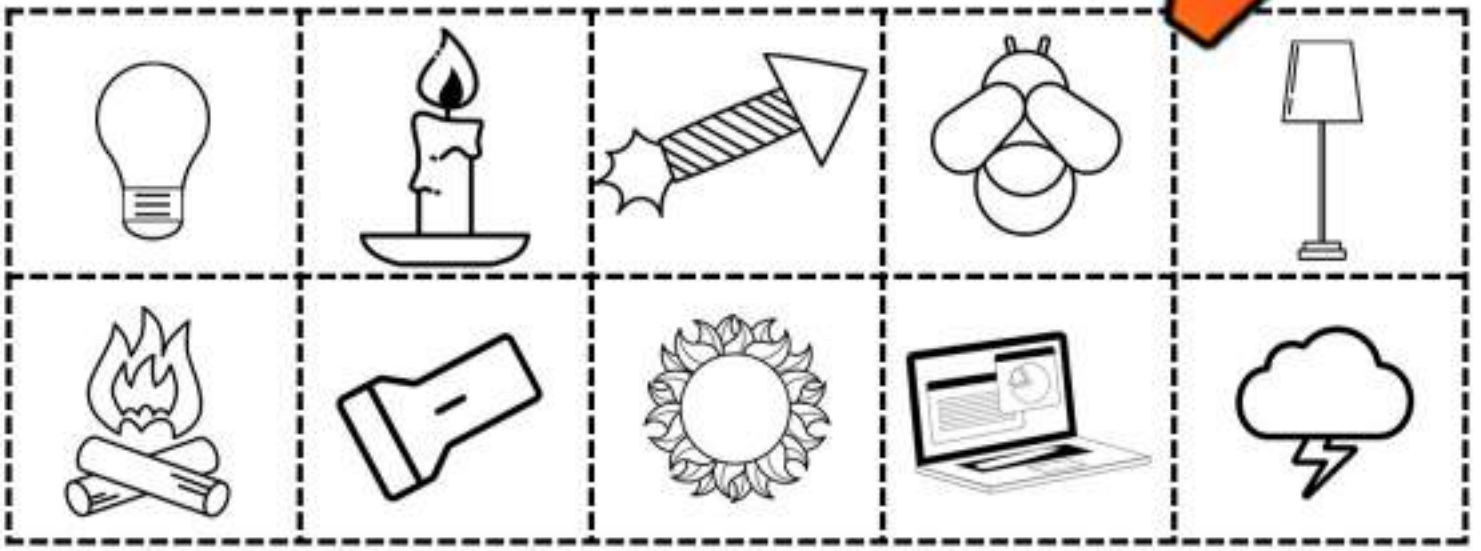
- ...ight
- Energy
- Natural
- Human
- Movement
- Firework
- Candle
- Fire
- Sun
- Star

Name: _____ 44

Curriculum Connection
E2.6

Questions	Cut and paste the light sources putting them in the right category

Natural Light	Artificial Light



Exit Cards

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

Name: ____________________ Mark
Is it natural or artificial light?

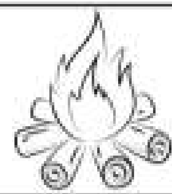

Natural
Artificial


Natural
Artificial


Natural
Artificial

Name: ____________________ Mark
Is it natural or artificial light?

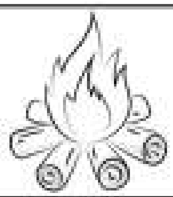

Natural
Artificial


Natural
Artificial


Natural
Artificial

Name: ____________________ Mark
Is it natural or artificial light?

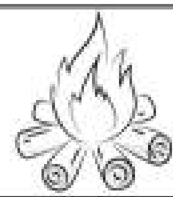

Natural
Artificial


Natural
Artificial


Natural
Artificial

Name: ____________________ Mark
Is it natural or artificial light?


Natural
Artificial


Natural
Artificial


Natural
Artificial

Name: _____ 47

Curriculum Connection
E2.6

The Sun – Fun Facts

1) The sun is big! Over one million earths could fit into the sun
2) The sun is growing
3) The sun is getting brighter
4) The su is not solid. It is a gas!
5) It tak utes for light from the sun to reach the earth
6) T at the sun is 15 million degrees Celsius
7) The n is a kn n as a yellow dwarf star
8) The sun is age s There are many stars that are bigger.
9) Most of the star the e bigger than the sun
10) NASA sent a spacecra ok It has been taking pictures since 1995.

Activity Draw pictures of 3 facts you foun resti

_____	_____	_____
_____	_____	_____
_____	_____	_____

Name: _____ 48

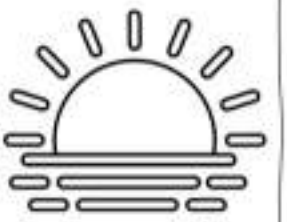
Curriculum Connection
E2.6

The Sun – Light Energy

Fill in the Blanks What is the missing word?

1. With no light energy from the sun, it would be _____.
light/dark

2. When the sun sets, it is _____ outside.
light/dark



3. When the sun is _____ outside.
light/dark

4. Other forms of light energy are used when the _____ has set.
sun/moon

5. If we had no sun, we would need a lot of lamps made _____.
suns/lights

6. Plants need the sun's _____ energy to grow.
heat/light

Write and Draw Write and draw about why we need the sun's light energy

_____

_____

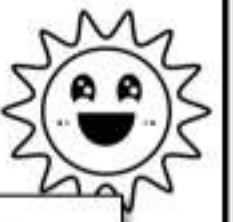
_____

_____

Name: _____ 49

Curriculum Connection
E2.6

Without the Sun



Activity Circle what would happen if we didn't have the sun

1) We would be	Hot	Frozen
2) It would be	Light	Dark
3) Pla ld	Grow	Die
4)	Seasons	Problems
5) W would	Fun	Food
6) We would p to	Darkness	Light
7) It would never be	Summer	Winter
8) We could get no _____ ergy	olar	Wind
9) The oceans, lakes, and rivers w d be	War	Cold
10) You wouldn't need	un	Gloves

Draw Draw a picture of what life would be life wi the

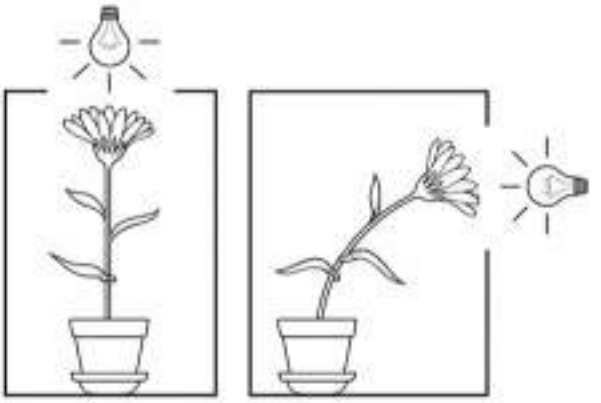
Name: _____ 50

Curriculum Connection
E2.6

Plants Need Light

Plants Need Sunlight

For a plant to grow, it needs light. Plants are smart because they will grow towards light. They do this to get the most amount of light.



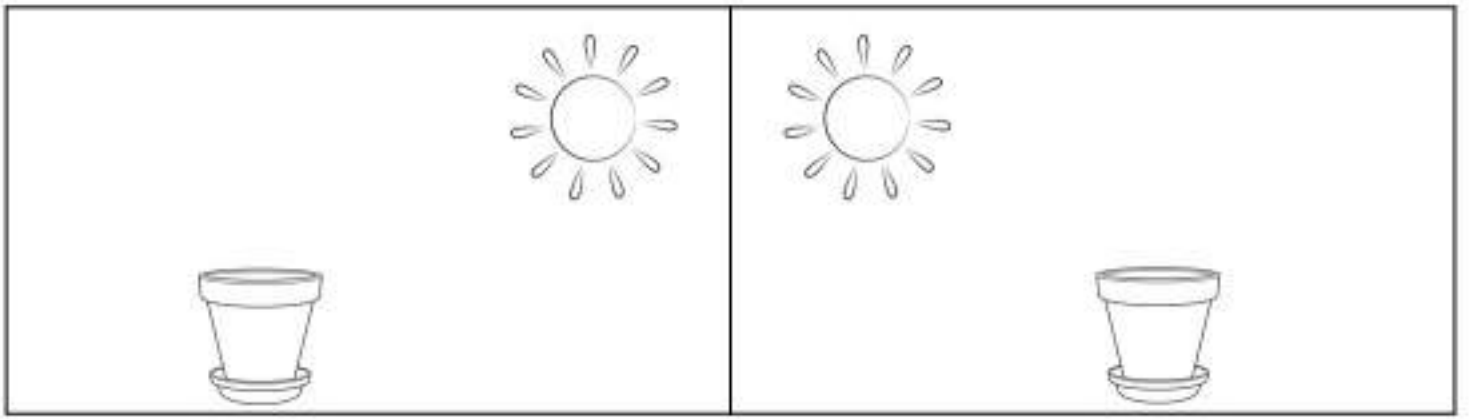
Plant[illegible]e leaves that soak up light. They use [illegible] to make food. The food they eat [illegible] to [illegible].

Outdoor [illegible] the sun. Since the Sun moves, plants tend to grow straight up[illegible]r pla[illegible]ir light from artificial sources. They will bend so they are aimed at [illegible]ource.

Yes/No Is the answer [illegible]s or [illegible]

1) Do plants grow away from light?	[illegible]es	No
2) Do plants soak up light with their leaves?	[illegible]	No
3) Do indoor plants bend towards light?	Ye[illegible]	No
4) Can plants make food without light?	[illegible]	
5) Do plants bend more outside than inside?	[illegible]	No

Draw Draw two plants that are growing towards the Sun



Name: _____ 51

Curriculum Connection
E2.6

The Sun's Light Energy – Growing Plants

Colour Colour the picture below that shows the sun helping the plants grow

Curriculum Connection
E2.6

Exit Cards

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

Name: _____ Mark

2 Truths and a Lie – Can you find the one that's not true?

	Plants use sun light to help make their own food.
	Leaves block light because plants don't need it.
	Plants bend and grow toward light sources.

Name: _____ Mark

2 Truths and a Lie – Can you find the one that's not true?

	Plants use sun light to help make their own food.
	Leaves block light because plants don't need it.
	Plants bend and grow toward light sources.

Name: _____ Mark

2 Truths and a Lie – Can you find the one that's not true?

	Plants use sun light to help make their own food.
	Leaves block light because plants don't need it.
	Plants bend and grow toward light sources.

Name: _____ 54

Curriculum Connection
E2.6

Experiment – Testing Sun Screen

Research Question Does sunscreen work?

If we use clear sunscreen on paper, will it protect the paper from the sun?

Materials What do we need?

- ✓ [illegible] paper
- ✓ Cle[illegible] spray [illegible]en SPF 30 or higher

Method How d[illegible] co[illegible]te [illegible]xperiment?

1) Fold a paper in half
2) Write sunscreen on one side [illegible]no sunscreen on the other
3) Coat your hands in sunscreen. Not too much that its dripping.
4) Place your hands on the sunscreen side
5) The page will be wet, but it will dry (it won't disappear completely)
6) Put the page in direct sunlight
7) If possible, take pictures to compare the paper
8) Wait and check on the paper periodically taking more pictures

Name: _____ 55

Curriculum Connection
E2.6

Observations | What happened?

1) Is the hand still dark after checking it hours later?
Yes No
2) Is the rest of the paper getting lighter or darker or staying the same?
Darker Lighter Same
3) W the paper and the handprint?
4) Did the sunscreen pro ne it stay the same colour?
Yes
5) Will sunscreen protect your skin?
Yes

Diagram | Draw a picture of the page with your

No Sunscreen	Sunscreen

Name: _____ 56

Curriculum Connection
E2.7

Emitting or Reflecting Light?

Light Emitters and Reflectors

When you see something, it is because it reflects or emits light. Most things we see reflect light. Reflecting light means light bounces off something.

Examples of light reflectors are:

- Tab[illegible]hairs
- [illegible]
- Mi[illegible]rs
- Everythi[illegible]e can

Examples of light emitters are:

- The Sun
- Flashlight or lightbulbs
- Candles
- Fireflies

Yes/No Is the [illegible]o t[illegible] yes or no?

1) Most things in the world are light [illegible]ers (m[illegible]ght)	Yes	No
2) Most things in the world are light reflecto[illegible]	[illegible]s	No
3) Your hair reflects light	Y[illegible]	No
4) Your pencil emits light	[illegible]	No
5) A lightbulb emits light	[illegible]	No

Draw Draw 4 pictures – 2 of light reflectors and 2 of light emitters

Light Emitter	Light Emitter	Light Reflector	Light Reflector

Name: _____ 57

Curriculum Connection
E2.7

Which Type? Is the picture an example of a light emitter or light reflector?

Emitter | Reflector

Emitter | Reflector

Emitter | Reflector

Emitter | Reflector

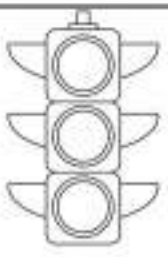
Emitter | Reflector

Emitter | Reflector

Emitter | Reflector

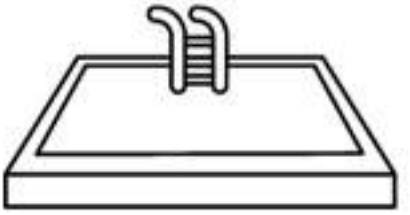
Emitter | Reflector

Emitter | Reflector



Emitter | Reflector

Emitter | Reflector



Emitter | Reflector

Name: _____ 58

Curriculum Connection
E2.7

Natural or Artificial Light Emitter

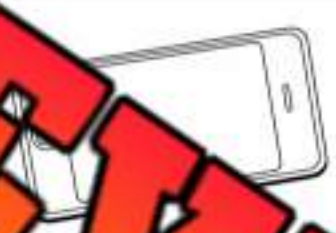
Which Type? Is the picture an example of a natural or artificial light emitter?

Artificial | Natural

Artificial | Natural

Artificial | Natural

Artificial | Natural



Artificial | Natural

Artificial | Natural

Artificial | Natural

Artificial | Natural

Artificial | Natural

Draw Draw 4 pictures – 2 of natural and 2 of artificial light emitters

Natural	Natural	Artificial	Artificial

Name: _____ 61

Curriculum Connection
E2.6

Light - Colour

Light – Seeing In Colour

Look around and you will see things in colour. What you are seeing is light reflecting off objects. Our eyes and our brains work together to take in the light and figure out what colour the light is.

If you [illegible] red apple, it is red because the light reflects off the apple and goes into our [illegible] eyes have a retina that can figure out what colour the light is. The retin[illegible] [illegible]r brain that the light is red, so the apple looks red.

If you turn [illegible] in [illegible]oom, you won't see any colour. This is because light is not reflecting [illegible] objec[illegible]thing will look black!

Yes/No Is the an[illegible]e q[illegible]s or no?

1) Can we see colours in the dark?	Yes	No
2) Do we need light to see colours?	[illegible]es	No
3) Do we need our brains to see colours?	[illegible]	No
4) Does light reflect off objects and move into our eye[illegible]		No
5) Do we just need our brains to see colour?		[illegible]

Draw Draw a picture of a brain and our eyes

Brain	Eyes

Name: _____ 62

Curriculum Connection
E2.6

Light - Brightness

Brightness

The brightness of a colour is how shiny it is. An object will look bright if it reflects or emits a lot of light.

In a dark room, nothing will look bright. If you turn on a strong la[illegible]ill look bright because it emits a lot of light. On the other hand, in the sa[illegible]thing will reflect light so nothing will be bright.

[illegible] colour[illegible]hter than others. With the light on in your classroom, red and yellow wi[illegible]ghte[illegible]nary colours. Blue is not as bright because it doesn't reflect as [illegible] ligh[illegible]

You Choose Which [illegible] is [illegible]

1)	Red	Blue
2)	Yellow	Violet
3)	Orange	Green
4)	Red	Violet

[illegible]	[illegible]e	Violet
[illegible]	[illegible]	Yellow
7)	[illegible]ge	Bl[illegible]
8)	Red	[illegible]

Draw Draw a picture of a bright object and a dull object

Bright	Dull

Name: _____ 63

Curriculum Connection
E2.6

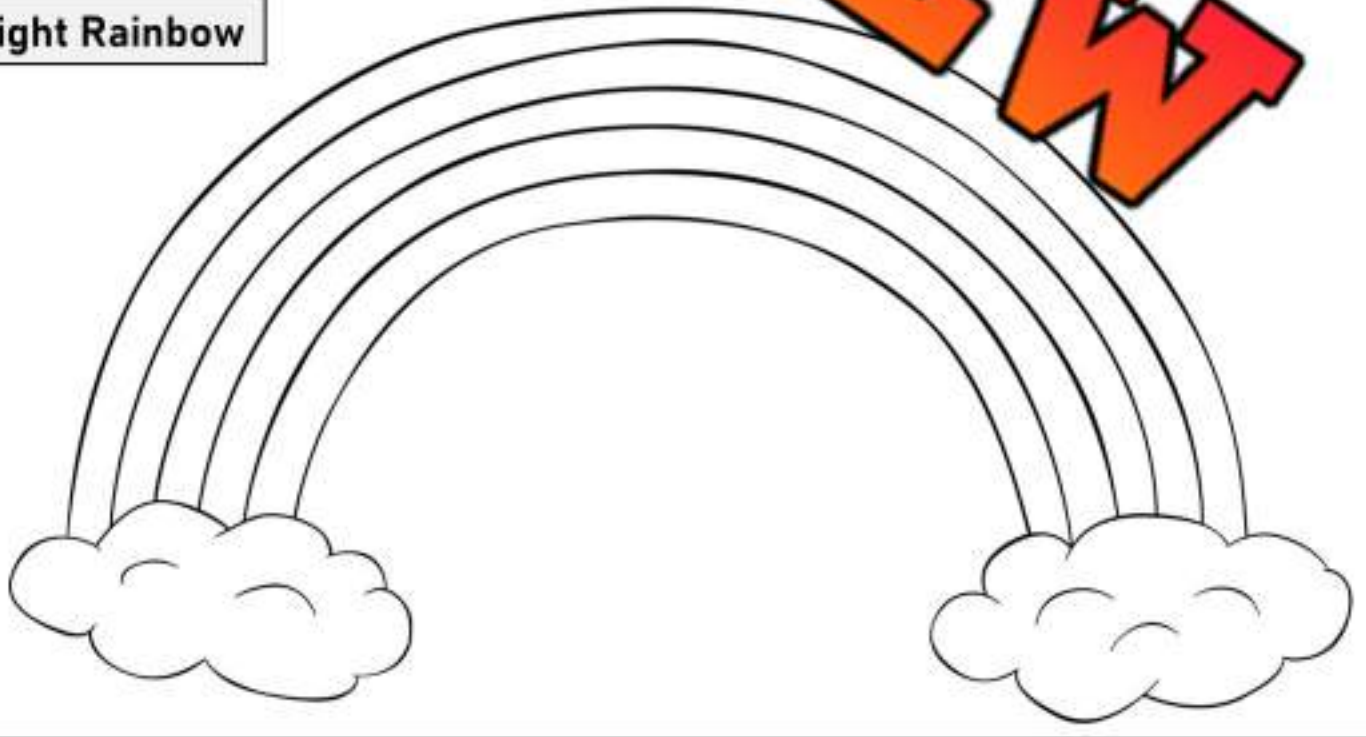
Light – Brightness Activity

The same colours can have a different brightness. An apple could be bright red or dark red (dull). A bright red apple will reflect more light than a dark red apple.

Colour Colour the rainbows using dark and bright colours

Dark Rainbow

Bright Rainbow



Name: _____ 64

Curriculum Connection
E2.8

Light Travels Through Objects - Transparency

Transparent Objects and Light

Transparent objects are really special! They are like doors for light - they let light pass right through them.

When light meets a transparent object, it doesn't stop or bounce back. Instead, it keeps moving straight through. That's why we can see things clearly on the other side of a transparent object.

Here are some examples of transparent objects:

- ✓ Glass: We can see outside when we look through a window!
- ✓ Clear plastic: Bottles and containers are made of this.
- ✓ Water: Have you noticed that you can see to the bottom of a clear pool?
- ✓ Air: It's all around us, which means light travels through it easily!

Yes/No — Is the material object transparent?

1) Glass	Yes	No	6) Plastic bag	Yes	No
2) Wood	Yes	No	7) Aluminum foil	Yes	No
3) Brick	Yes	No	8) Cardboard	Yes	No
4) Paper	Yes	No	9) Clothing	Yes	No
5) Clear tape	Yes	No	10) Basketball	Yes	No

Questions — Answer the questions below

1) What does transparency mean?

2) Write 4 objects/materials you can see right now that are transparent.

Curriculum Connection
E2.8

Exit Cards

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

Name: ____________________ | Mark |

Sort the following items into the correct categories: "Transparent" or "Not Transparent"

Items	
Eyeglasses	Backpack
Book	Soap Bubble
Transparent	Not Transparent

Name: ____________________ | Mark |

Sort the following items into the correct categories: "Imported" or "Grown in Canada."

Items	
Eyeglasses	Backpack
Book	Soap Bubble
Transparent	Not Transparent

Name: ____________________ | Mark |

Sort the following items into the correct categories: "Imported" or "Grown in Canada."

Items	
Eyeglasses	Backpack
Book	Soap Bubble
Transparent	Not Transparent

Name: ____________________ | Mark |

Sort the following items into the correct categories: "Imported" or "Grown in Canada."

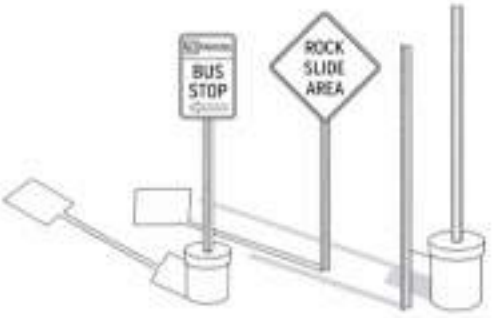
Items	
Eyeglasses	Backpack
Book	Soap Bubble
Transparent	Not Transparent

Name: _____ 66

Curriculum Connection
E2.9

Shadows

What are Shadows?



The Sun sends light rays in straight lines nearly 300 000 km/second. When objects block the Sun's light, shadows are made.

A sh is a dark area on a surface. It is dark because reach the surface because it travels in straight lines.

make a shadow. If an object blocks the light of a lamp or flashlight, a s

The shadow ok li t that is blocking the light. The closer the object is to the light arge hadow will be.

Multiple Choice

Circle the best

1) If the light is closer to an object, the shadow be...	igger	Smaller
2) Light travels in _____ lines		Curved
3) Any light _____ can make a shadow	Ref	Emitter
4) A shadow is a _____ area		ht
5) A small object will create a _____ shadow	Smal	Big

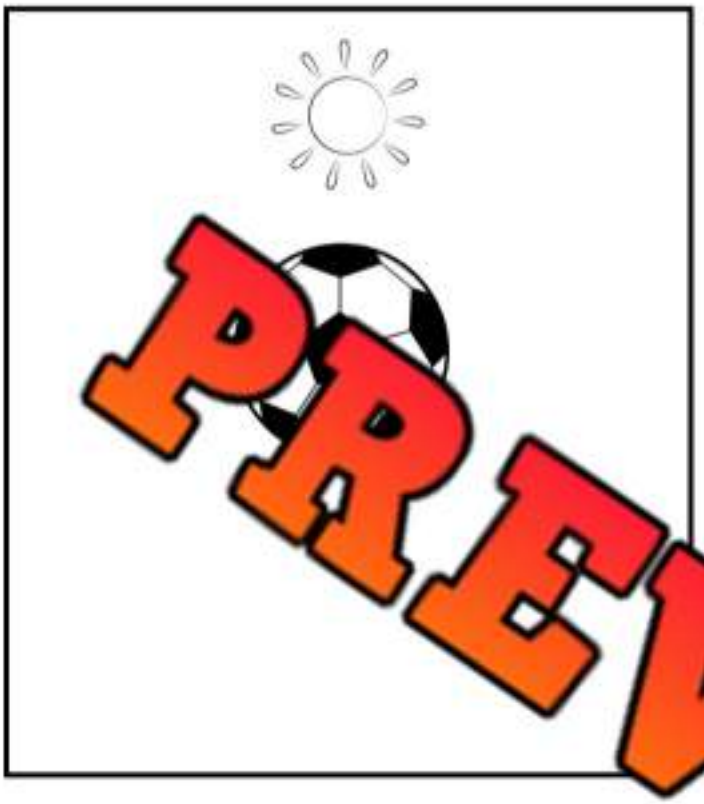
Matching

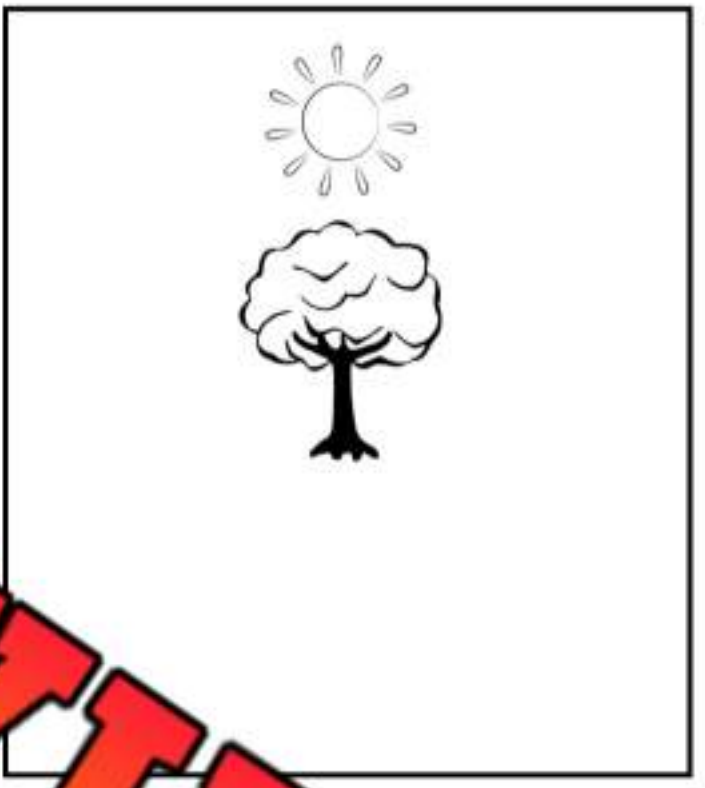
Draw a line from the animal to its shadow

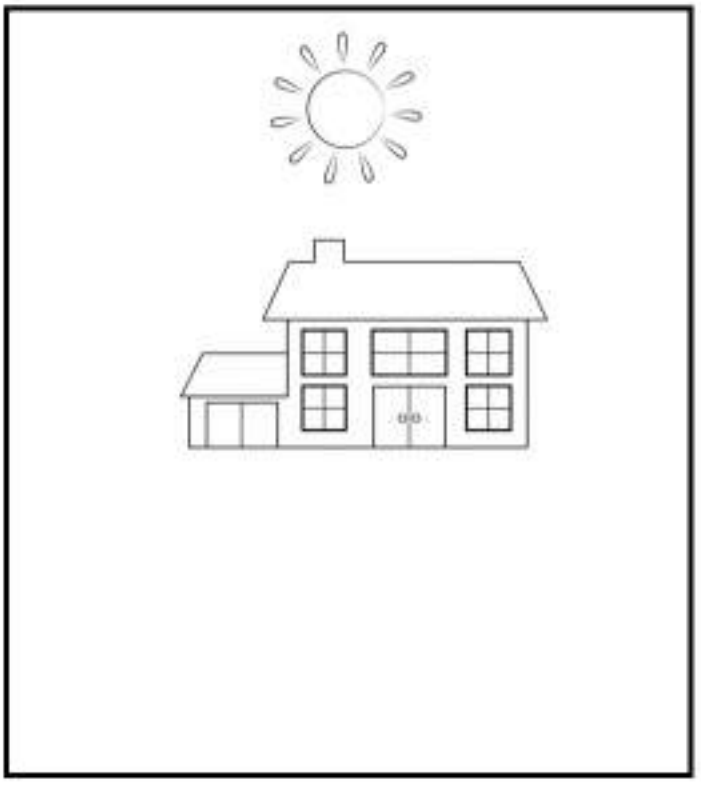
Name: _____ 67

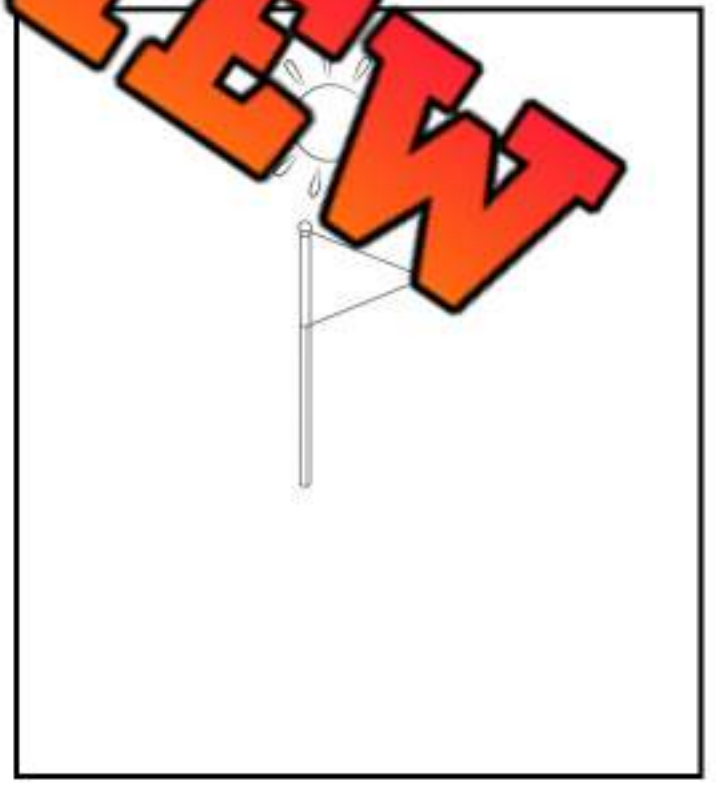
Curriculum Connection
E2.9

Draw Draw shadows of the objects in the boxes below. Look at where the sun is to know where the light would be blocked





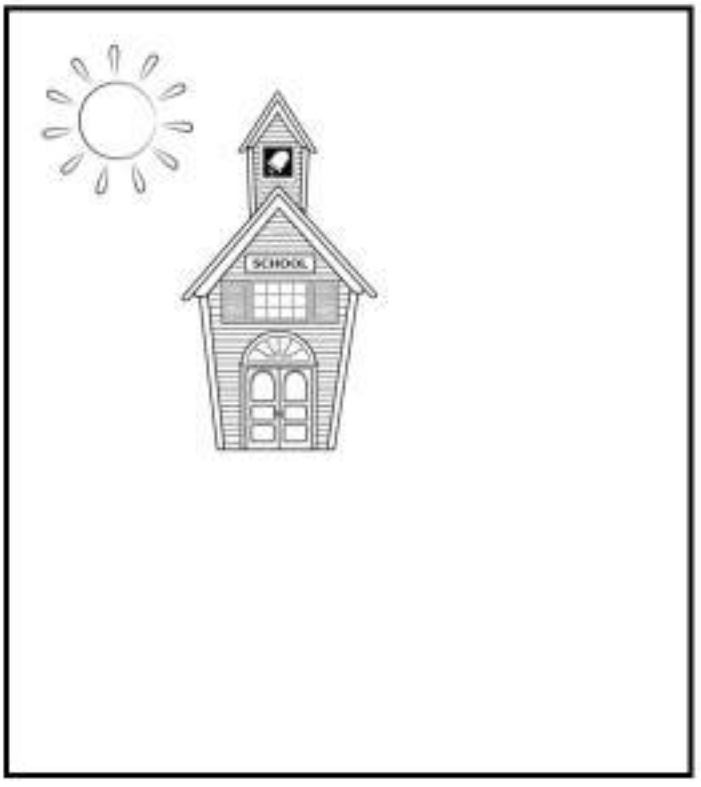


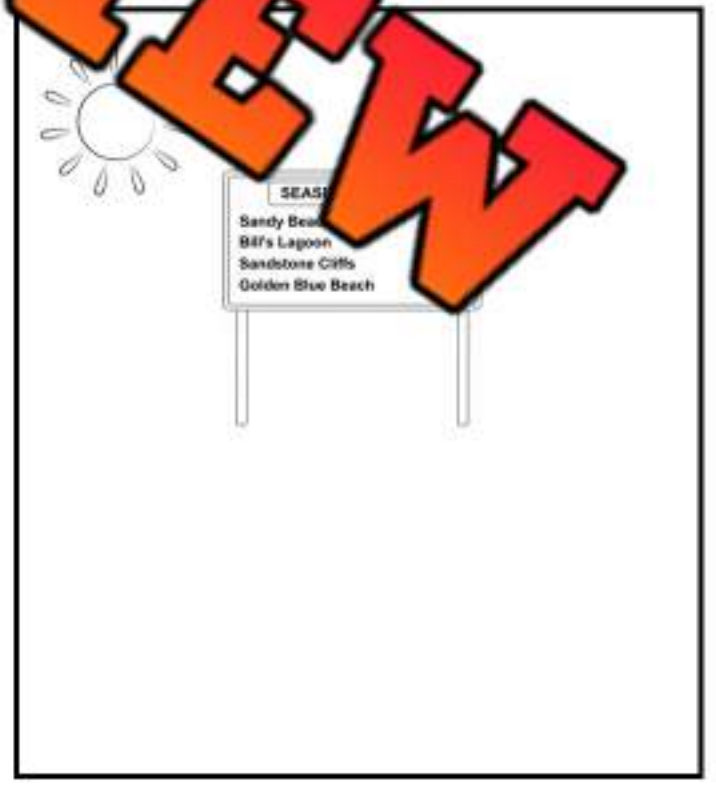


Name: _____ 68

Curriculum Connection
E2.9

Draw Draw shadows of the objects in the boxes below. Look at where the sun is to know where the light would be blocked

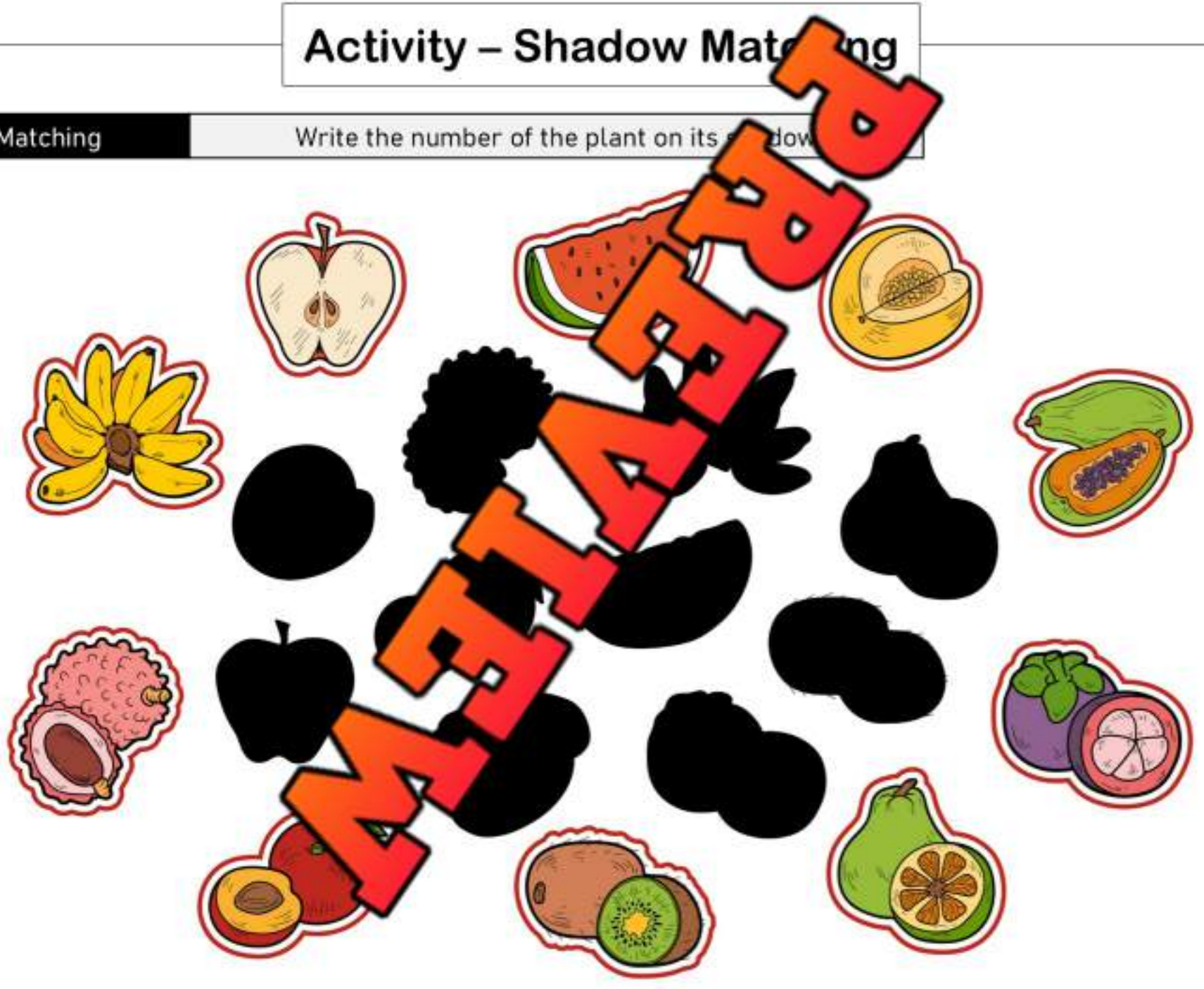




Name: _____

Activity – Shadow Matching

Matching	Write the number of the plant on its shadow



Name: _____ 76

Curriculum Connection
E2.7

Light Bending - Refraction

What is Light Bending - Refraction?

Refraction is when light changes direction, or **bends**. This might sound strange, but it happens all the time!

Why Does Light Bend?

Light travels at different speeds through different materials. When light passes from one material, like air, into a different material, like water or glass, it changes speed and this makes it change direction. This is what we call refraction.

Seeing Refraction in Daily Life

You can see refraction happening in your everyday life.
For example, when you put a pencil or straw in a glass of water, it looks like it's broken or bent. But it's not really - it's just the light bending when it moves from the air into the water.

Rainbows and Refraction

Rainbows are another example of light bending. When sunlight hits a raindrop, it slows down and bends. Then, it bends again when it comes out of the raindrop. This bending separates the light into all the colours of a rainbow.

Name: _____ 77

Curriculum Connection
E2.7

Question What is refraction? Why does it happen?

Yes/No the answer yes or no?

1) Does refracti an t ds?	Yes	No
2) Does light refract wh ves ir into water?	Yes	No
3) Does a rainbow happen beause ref on?	Yes	No
4) Is the pencil in the reading brok	Yes	No
5) Does light stay the same speed in air th ter	Yes	No

Draw Draw your own diagram of refraction in action ow wing

Name: _____ 78

Curriculum Connection
E2.7

Experiment – Refracting Light

Research Question

What are we learning more about?

When light passes through a transparent (clear) material, it bends as it comes out the other side. The cause of refraction is because light travels at different speeds in different materials. What will happen to light as it passes through a glass jar with water in it?

Materials

What we need for our experiment?

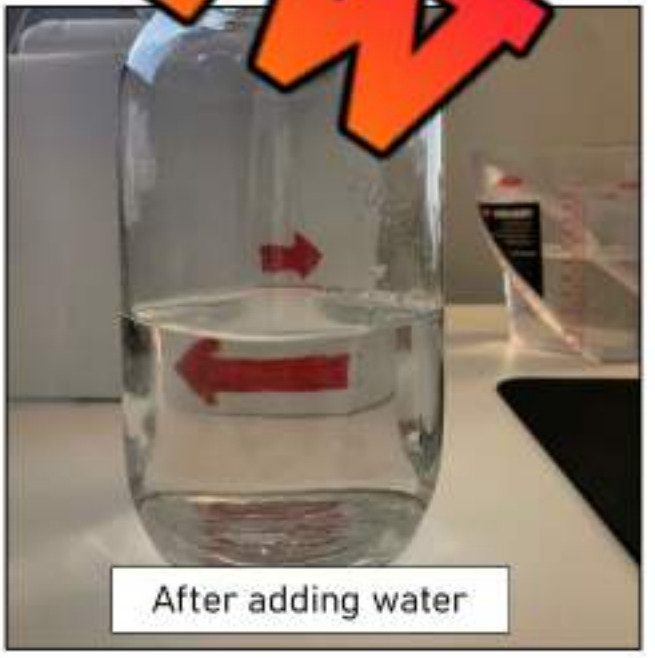
1) Glass jar – [illegible] works the best
2) Water
3) Paper with designs
4) Measuring cup full of water – enough to almost fill the jar

Before adding water

Method

How do we complete the experiment?

1) Get your paper ready with the designs you want to see change. We used red arrows drawn in the same direction.
2) Stand the paper up by leaning it against a wall or a book
3) Place the jar in front of the paper
4) Slowly add the water to the jar. You will might need to rotate the jar to show the effect.
5) Record your observation.



After adding water

Name: _____ 79

Curriculum Connection
E2.7

Observations | What happened?

1) What happened? Write down what you saw as you added water.

_____

_____

_____

2) Draw the arrows before you added water and after

Before Adding Water	After Adding Water

Results | Answer the questions below

Why did the designs move as you added water?

_____

_____

_____

Light Splitting into Colours - Dispersion

What is Light Dispersal?

When we talk about light dispersing, we're saying that light is splitting into different colours. Just like in a rainbow!

How Do [illegible] Split Into Colours?

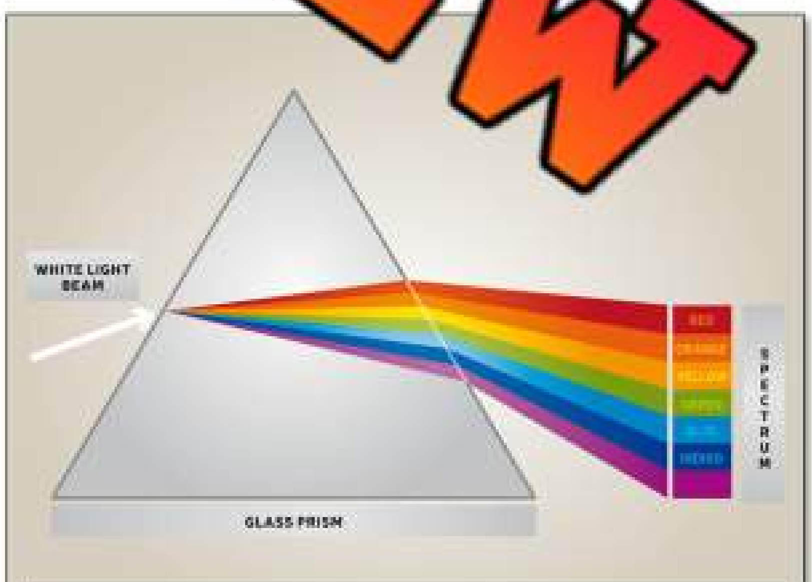
Ligh[illegible] the su[illegible]m a light bulb, looks white but it's actually a big team of different c[illegible]n t[illegible]ight passes through something special like a prism or a rain[illegible] bre[illegible] a bunch of colours.

Seeing Dispersed Light

You've seen light disperse if you've [illegible]er see[illegible] Rainbows happen when sunlight passes through raindrops. [illegible]ght [illegible] raindrop, bends a bit, and then comes out split into all the colo[illegible] in a[illegible]ow.

Prisms and Light Dispersal

Prisms are another thing that can make light disperse. When white light from the sun or from a flashlight hits a prism, it splits into all the different colours we can see. This line of colours is called a spectrum.



DISPERSION OF WHITE LIGHT THROUGH A GLASS PRISM

Name: _____ 81

Curriculum Connection
E2.7

Question What does it mean for light to disperse?

Yes/No the answer yes or no?

1) Is light from th white	Yes	No
2) Does white light split a pris	Yes	No
3) Does the spectrum have at col ?	Yes	No
4) Do rainbows happen because of li plitting?	Yes	No
5) Does light dispersion mean light splitting?	Yes	No

Draw Draw your own diagram of light splitting pris

Curriculum Connection
E2.7

Exit Cards

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

Name: _____ Mark

Circle the correct answer.

1) What happens during light dispersion?	
It splits into colours	It disappears
2) What looks white but has many colours?	
Sunlight	Shadow
3) What can split light into colours?	
Prism	Mirror
4) Where do we often see dispersed light?	
Rainbow	Dark room

Name: _____ Mark

Circle the correct answer.

1) What happens during light dispersion?	
It splits into colours	It disappears
2) What looks white but has many colours?	
Sunlight	Shadow
3) What can split light into colours?	
Prism	Mirror
4) Where do we often see dispersed light?	
Rainbow	Dark room

Name: _____ Mark

Circle the correct answer.

1) What happens during light dispersion?	
It splits into colours	It disappears
2) What looks white but has many colours?	
Sunlight	Shadow
3) What can split light into colours?	
Prism	Mirror
4) Where do we often see dispersed light?	
Rainbow	Dark room

Name: _____ 83

Curriculum Connection
E2.7

Experiment – Light Dispersion

Research Question

What are we learning more about?

To understand how light can split into a spectrum of colours through an experiment with a prism.

Materials

What do we need for our experiment?

1) A prism (you can buy one online or at a science store)
2) A flashlight
3) A white piece of paper
4) A dark room

Method

How do we complete the experiment?

1) Go into a dark room. Make sure all the lights are turned off.
2) Place the white piece of paper on a table or the floor.
3) Turn on the flashlight and shine the light through the prism onto the white piece of paper.
4) Look at the paper. You should see a line of different colours. This is a light spectrum!

Name: _____ 84

Curriculum Connection
E2.7

Observations	What happened?

1) What colours did you see on the piece of paper?

_____

_____

_____

2) Can y[illegible]ber and tell the order of the colours?

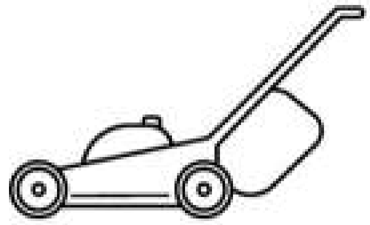
3) Draw the colours you saw in the o[illegible] saw

Name: ______________________ 85 Curriculum Connection E2.6

Sound and Light Energy

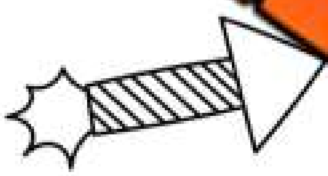
Directions Circle if the picture makes sound and/or light

Light | Sound

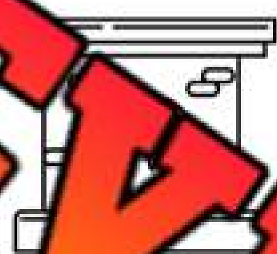


Light | Sound

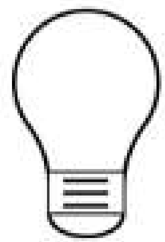
Light | Sound



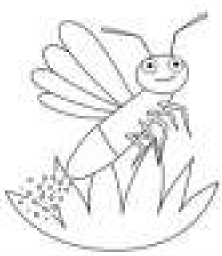
Light | Sound



Light | Sound



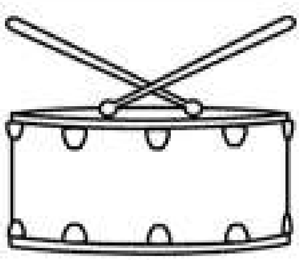
Light | Sound



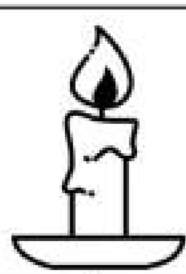
Light | Sound

Light | Sound

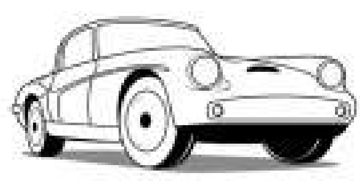
Light | Sound



Light | Sound



Light | Sound



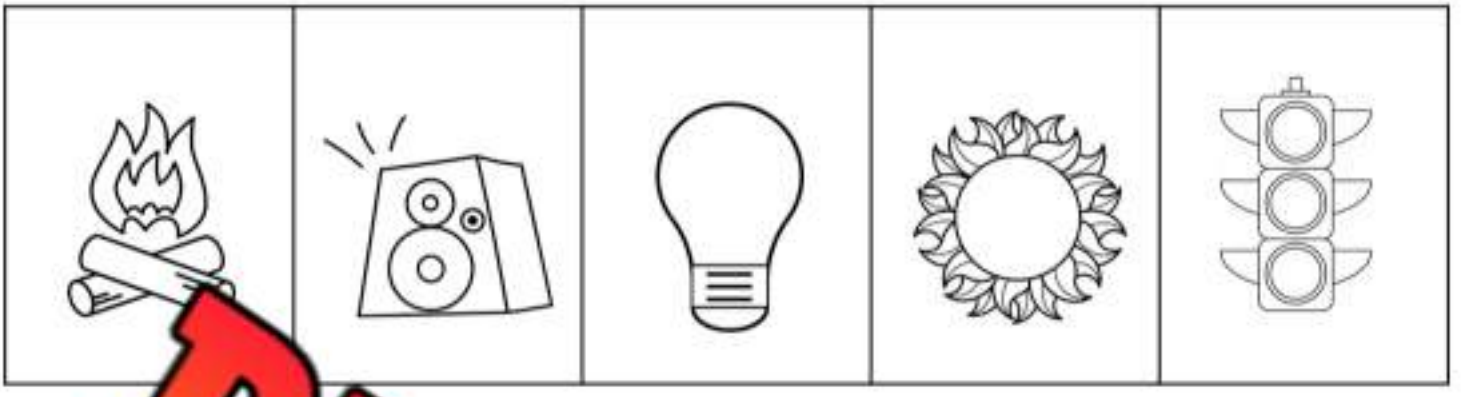
Light | Sound

Name: _____ 86

Curriculum Connection
E2.6

Light Energy

Circle the picture that is NOT light energy



Sound Energy

Circle the picture that is NOT sound energy

Both Types

Circle the pictures that make sound

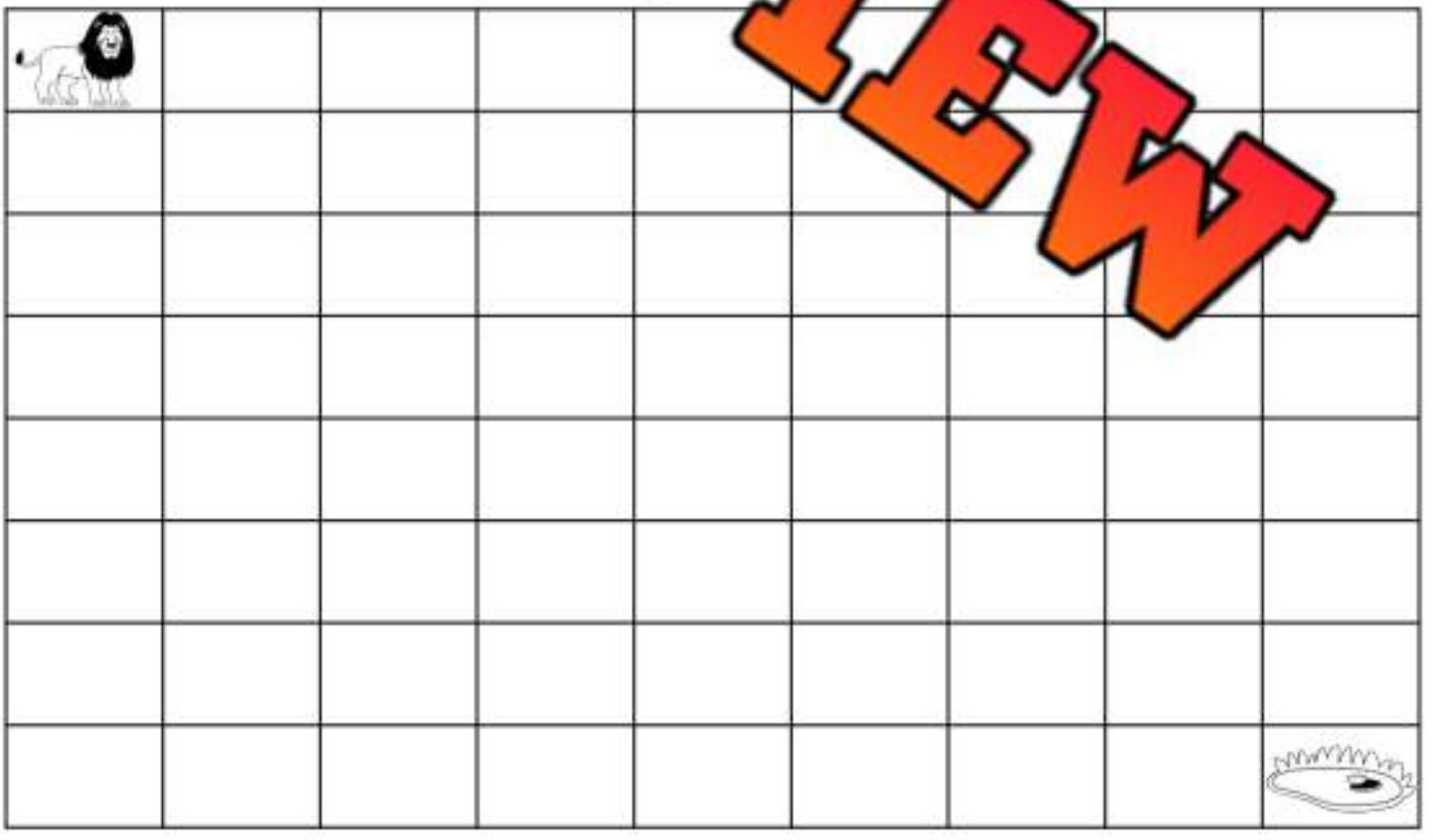
Name: _____ 87

Curriculum Connection
CS.1

If Then Conditional Statements - Activity

Questions Follow the if/then statements to move the lion to the watering hole

1)	If light energy comes from the sun	then	Move ↓ 4 spots
2)	If crickets are natural sources of sound	then	Move → 2 spots
3)	If a [illegible] energy	then	Move ↓ 3 spots
4)	If [illegible] light	then	Move → 3 spots
5)	If plant[illegible]	then	Move ↓ 3 spots
6)	If drums m[illegible]	then	Move ← 5 spots
7)	If the sun makes its[illegible]	then	Move → 3 spots
8)	If the moon makes its own lig[illegible]		Move ↑ 4 spots



Name: _____ 88

Curriculum Connection
CS.1

Coding – Automatic Street Lights

Street lights make our cities safer. With the lights on at night, we can see better. This is helpful for us in many ways.

- ✓ Can drive at night more safely
- ✓ Can play outside longer
- ✓ Can prevent theft and crime

City lights are on timers. Codes are used to program these lights. The codi[illegible] the timer uses IF/ELSE statements.

[illegible] the time is between 7:00pm and 6:00am
[illegible]urn lights (on)
[illegible]n sta[illegible] (off)

Fill in the Blanks

Use [illegible] to fill in the blanks

Word Bank				
code	crime	safe[illegible]		timer

1) Lights make driving _____.
2) Street lights are turned on by a _____
3) A _____ is used on the timer to tell the lights whe[illegible]
4) Street lights stop _____.
5) Lights let us play outside _____.

Read the Code

Would the lights be on or off based on the time?

5:00 pm	On	Off
9:00 pm	On	Off
7:00 am	On	Off
5:30 am	On	Off

7:01 pm	On	Off
6:01 am	On	Off
6:50 pm	On	Off
2:30 am	On	Off

Name: _____ 89

Curriculum Connection
CS.1

Writing Code – Lights In Your Room

Coding Write your own code for a timer that controls lights in your room

Read Code Would the lights be on or off based on the time?

7:00 pm			6:01 pm	On	Off
11:00 pm		Off	8:01 am	On	Off
6:00 am	On	Off	50 pm	On	Off
3:30 am	On	Off		On	Off
12:00 pm	On	Off	30 pm	On	Off

Results Answer the questions belo

1) Why did you program the timer for these times?

2) How could using coding/timers help you in your life?

3) What else could you put on a timer to help you in your life? Explain.

Name: _____ 90

Curriculum Connection
CS.1

History of Street Lights

History of Street Lights
In ancient Rome, wealthy citizens used vegetable oil lamps on the front of their homes to light up the streets. Special slaves were in charge of lighting, extinguishing and watching the lamps.

In the year 1417, the mayor of London, England made it the law that everyone had to hang lanterns outside of their homes after dark and in the winter.

In 187 Thomas Edison created the first lightbulb. These bulbs were used for streetligh later. Before lightbulbs, people burned oil to make a flame that made light.

Colou Co htbulb and the oil lamp, then draw your own versions

Lightbulb | **il La**

Questions Answer the questions below

1) Who invented the lightbulb?

2) Which is safer – a lightbulb or oil lamp?

Lightbulbs	Oil Lamps

3) How has the invention of coding and timers made our streets safer?

Name: _____ 91

Curriculum Connection
CS.1

Coding – Following Instruction

Directions Read the program and follow the instructions to draw the output

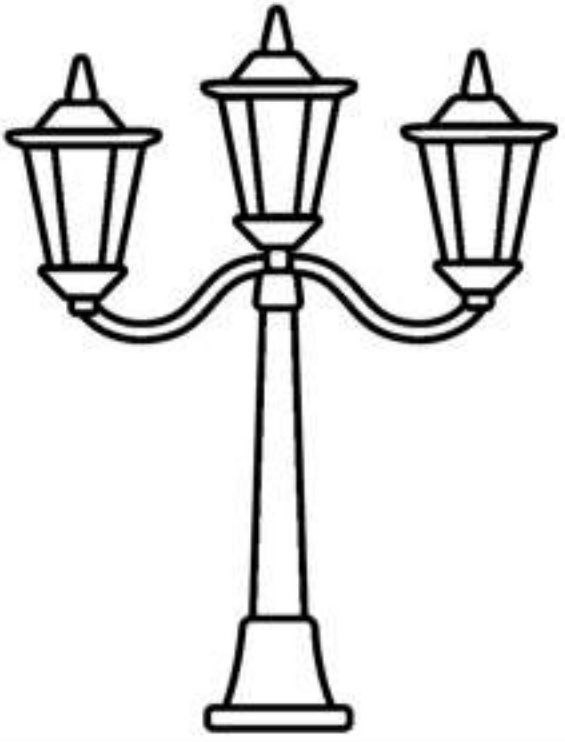
If ▶ is clicked

lour the street light (grey)

lights (yellow)

background

Draw a be street light

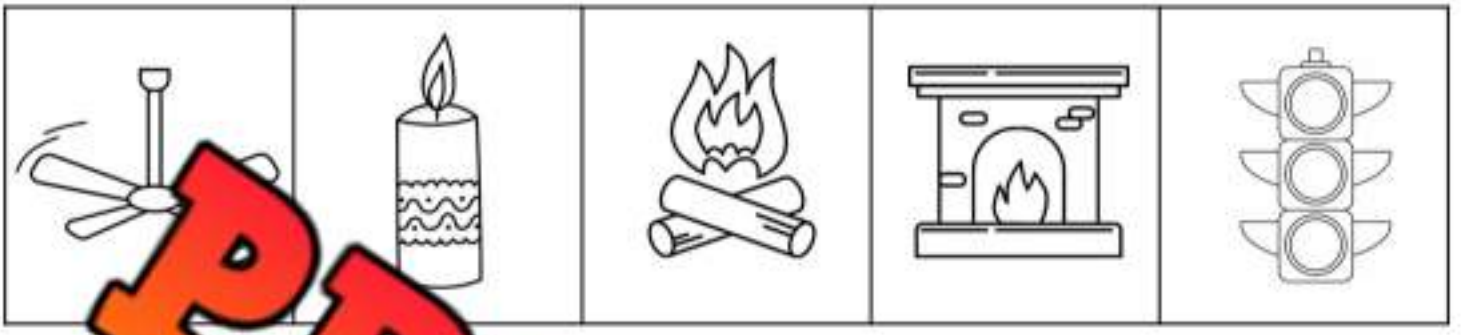
Original	Output
	

Name: _____ 93

Unit Test – Energy in our Lives

Light Energy

Circle the picture that is NOT light energy

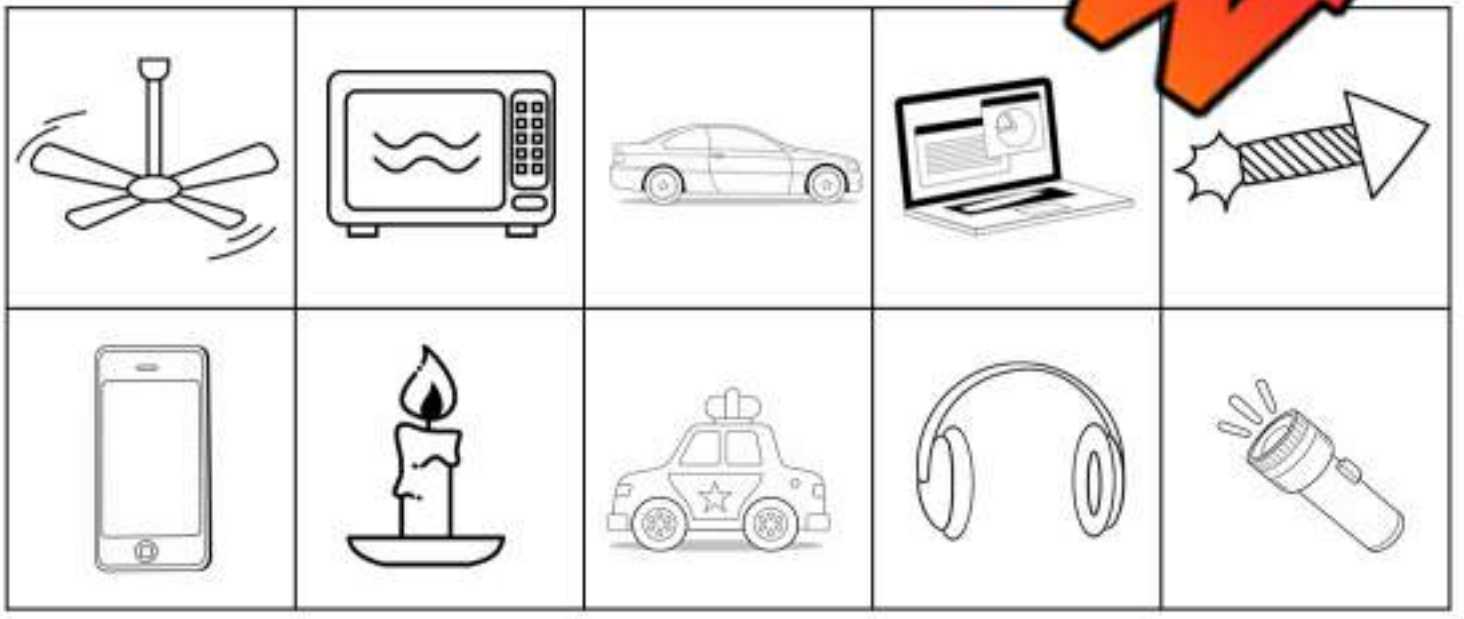


Sound Energy

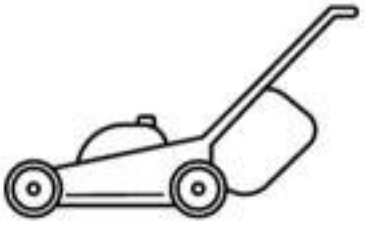
Circle the picture that is NOT sound energy

Both Types

Circle the pictures that makes sound and light



Directions Does the picture make artificial sound or natural sound?



Artificial | Natural

Artificial | Natural

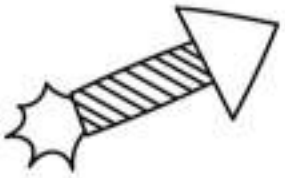
Artificial | Natural

Artificial | Natural

Artificial | Natural

Artificial | Natural

Which Type? Is the picture an example of a[illegible]l or [illegible]light emitter?



Artificial | Natural

Artificial | Natural

Artificial | Natural

Artificial | Natural

Artificial | Natural

Artificial | Natural

Multiple Choice | Circle the best answer

1) What is the biggest source of light?	Lightbulbs	Sun
2) Light and sound move in a _____ path.	Curved	Straight
3) Which material reflects light/sound?	Hard Floors	Carpet
4) Which [illegible] absorbs light/sound?	Windows	Curtains
5) Wh[illegible]ght be[illegible]alled?	Refraction	Reflection
6) _____ is how [illegible]oise	Pitch	Volume
7) _____ is how long a [illegible]	Duration	Pitch
8) A bird chirping is a _____ pitch.	[illegible]ow	High
9) We hear sound because of _____.	Vib[illegible]	Pitch
10) Which drum makes a louder sound?	[illegible]	[illegible]mall Drum

Draw | Draw the shadows by noticing the distance of the flashligh[illegible] object