WEEK 4

STEM Week



Hi, I'm Blue Marble! Let's work together this week to earn a STEM Badge! What is STEM? It's Science, Technology, Engineering, and Math! This week, let's build new things, explore the wonders of nature, and learn about everything big and small.

Day 1



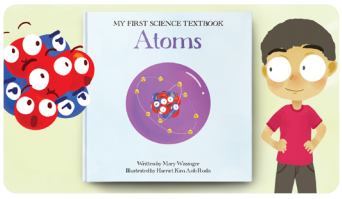
It's a Firefly Night

Day 2



Harry Bear and Friends: Count Fish

Day 3



Atoms: My First Science Textbook

Day 4



Slumberkins: Narwhal

Day 5—Read Along Together



Inventors Who Changed the World

Make a paper airplane! Find the activity video at ***vooks.com/campvooks.***

Materials

- 8 ½" x 11" sheet of paper
- Crayons or markers (optional)

View the Camp Vooks Channel

Scan the code with your mobile device to go to our Camp Vooks channel or head to ***watch.vooks.com/channels/camp-vooks***

WEEK 4

Activity Checklist

STEM

CAMP VOOKS

READ ALONG TOGETHER

Day 1

It's a Firefly Night

1	Drawing and Writing	
2	Coloring Sheet	
3	Counting Fireflies	
4	Firefly True or False	

Day 2

Harry Bear and Friends: Count Fish

5	Coloring Sheet	
6	Drawing and Writing	
7	Count the Fish	
8	Fish Craft	

Day 3

Atoms: My First Science Textbook

9	Coloring Sheet	
10	Drawing and Writing	
11	Atom KWL Chart	
12	Atom Craft	

Earn your STEM badge by reading the storybook each day, doing activity of your choice, and completing the Read Along Together activity! Cut it out, color, and share with us on social media @vooks #campvooks.

Day 4

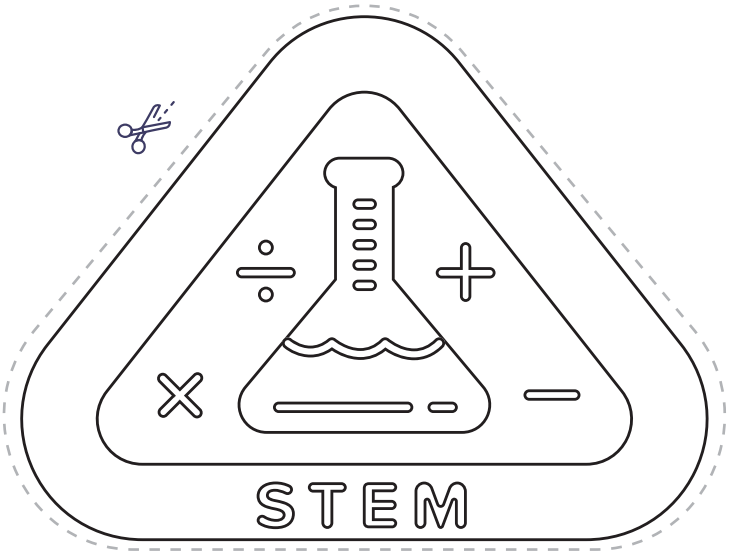
Slumberkins: Narwhal

13	Coloring Sheet	
14	Drawing and Writing	
15	About Me Dice	
16	Sequencing	

Day 5

Inventors Who Changed the World

17	Create a Paper Airplane (View the activity video at ***vooks.com/campvooks)***	
18	Fact Sheet	
19	Connecting Activity	
20	Draw Yourself as an Inventor	



Day 1

It's a Firefly Night



Book Information

Run Time	7:00
Author	Dianne Ochiltree
Illustrator	Betsy Snyder
Narrator	Emily Wold
Publisher	Blue Apple Books/2013
Ages	3–7/AD410–600L
Genre	Narrative nonfiction
Text Structure	First person narrative
Themes & Ideas	Counting 1–10; fireflies
Language & Literary Features	Lilting rhymes, firefly facts
Sentence Complexity	Simple sentences
Vocabulary	zip, dancing light show, uncurling, flitter, flutter, blink, moist, habitats, swampy
Special Vocabulary	larva, species, glowworms
Illustrations	Glowing art captures the magic of a firefly-lit summer night.

Story Summary

An endearing daddy-daughter story is also a counting story! A favorite childhood activity—catching fireflies—glows from the pages of this story, plus counting. Lilting rhymes tell the story of a little girl's capture and release of fireflies, one by one, capped off by a collection of fascinating firefly facts.

Focus
Fireflies, Counting 1–10

Activity Ideas

Fact cards
Create fact cards about fireflies based on *It's a Firefly Night.*

Finger Puppets
Make ten firefly finger puppets. Practice counting 1 to 10 and 10 backwards to one.

Ten Fireflies
Cut out ten fireflies. Count as the children put them in a cup. Count backwards as they take them out.

KWL Chart
Create a KWL chart about fireflies.

Additional activities can be found in the following pages of this document. Blue Apple Books sometimes combine an early reading story with an upper level lesson. The activities are developed to meet the needs of both readers.

Coloring Sheet

NAME _____

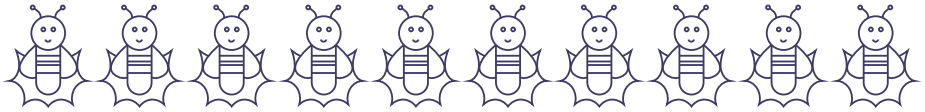
Color in the picture below. Draw fireflies in the jar and then write on the label how many you drew.



Counting Fireflies

Solve each math problem by coloring the correct number of blue and red fireflies. Then write in the number of blue and red fireflies you colored to complete the addition problem.

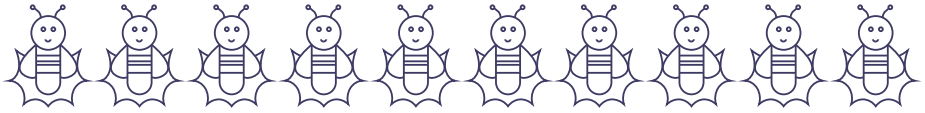
Color 1 firefly blue and the rest red. How many fireflies did you color red? Write the addition problem underneath:



_____ + _____ = 10

BLUE FIREFLIES RED FIREFLIES

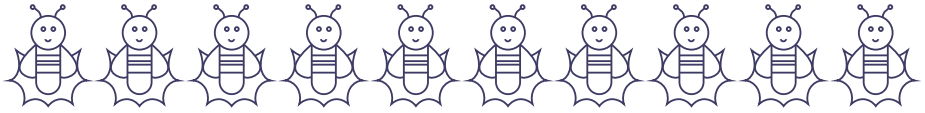
Color 6 fireflies blue and the rest red. How many fireflies did you color red? Write the addition problem underneath:



_____ + _____ = 10

BLUE FIREFLIES RED FIREFLIES

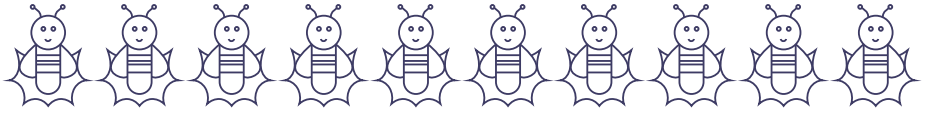
Color 3 fireflies blue and the rest red. How many fireflies did you color red? Write the addition problem underneath:



_____ + _____ = 10

BLUE FIREFLIES RED FIREFLIES

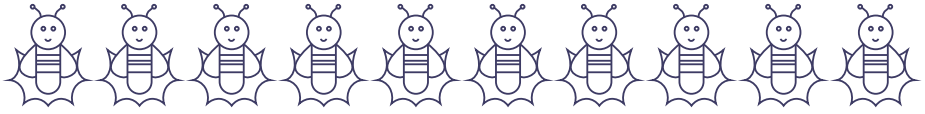
Color 2 fireflies blue and the rest red. How many fireflies did you color red? Write the addition problem underneath:



_____ + _____ = 10

BLUE FIREFLIES RED FIREFLIES

Color 8 fireflies blue and the rest red. How many fireflies did you color red? Write the addition problem underneath:



_____ + _____ = 10

BLUE FIREFLIES RED FIREFLIES

NAME

Drawing and Writing

NAME _____

Write about a firefly night. Draw a picture of your story.

Firefly True or False

NAME _____

After watching *It's a Firefly Night*, circle "T" if the statement about fireflies is true and "F" if the statement is false.

1	On cold winter days, fireflies rest in tall grass or on the leaves of plants and trees.	T	F
2	Fireflies range in size from ⅕ inch to one inch in length.	T	F
3	Although commonly called a "firefly" or "lightning bug," this insect is really a beetle.	T	F
4	Fireflies need dry habitats. They are found around desert areas, without any bodies of water.	T	F
5	The firefly grows in stages, from egg to larva, to adult insect. Some larvae give off light. When that happens people call them "glowworms".	T	F
6	Because they live only three to four weeks, most adult fireflies do not eat. A female firefly will lay up to five hundred eggs on the underside of leaves, in moss, or in water.	T	F
7	Scientists believe fireflies light up in rhythmic patterns to attract mates or to warn each other about dangers.	T	F
8	Farmers and gardeners don't like fireflies because the larvae eat many snails, slugs, and other pests.	T	F
9	There are only 5 different firefly species.	T	F

Day 2

Harry Bear and Friends: Count Fish



Book Information

Run Time	3:10
Author	Harriet Ziefert
Illustrator	Elliot Kreloff
Narrator	Lucy Capri
Publisher	Blue Apple/2007
Ages	2–5
Genre	Beginning concepts
Text Structure	Rhymed couplets
Themes & Ideas	Counting, fish, opposites
Language & Literary Features	Opposites
Sentence Complexity	Phrases
Vocabulary	one, two, three, four, five, six, seven, eight, nine, ten, fish, yellow, blue, short, long, wiggly, straight, big, small
Illustrations	Fanciful crayon drawings of furry animals and fish

Story Summary

When Harry and his friends go to the lake, they see all sorts of fish: short and long, big and small, wiggly and straight, and yellow and blue. Children can count the fish with Harry and his friends.

Focus
Counting 1 to 10

Activity Ideas

Make a Foldable Book

Write the numbers on the bottoms of the pages, draw and color that many fish.

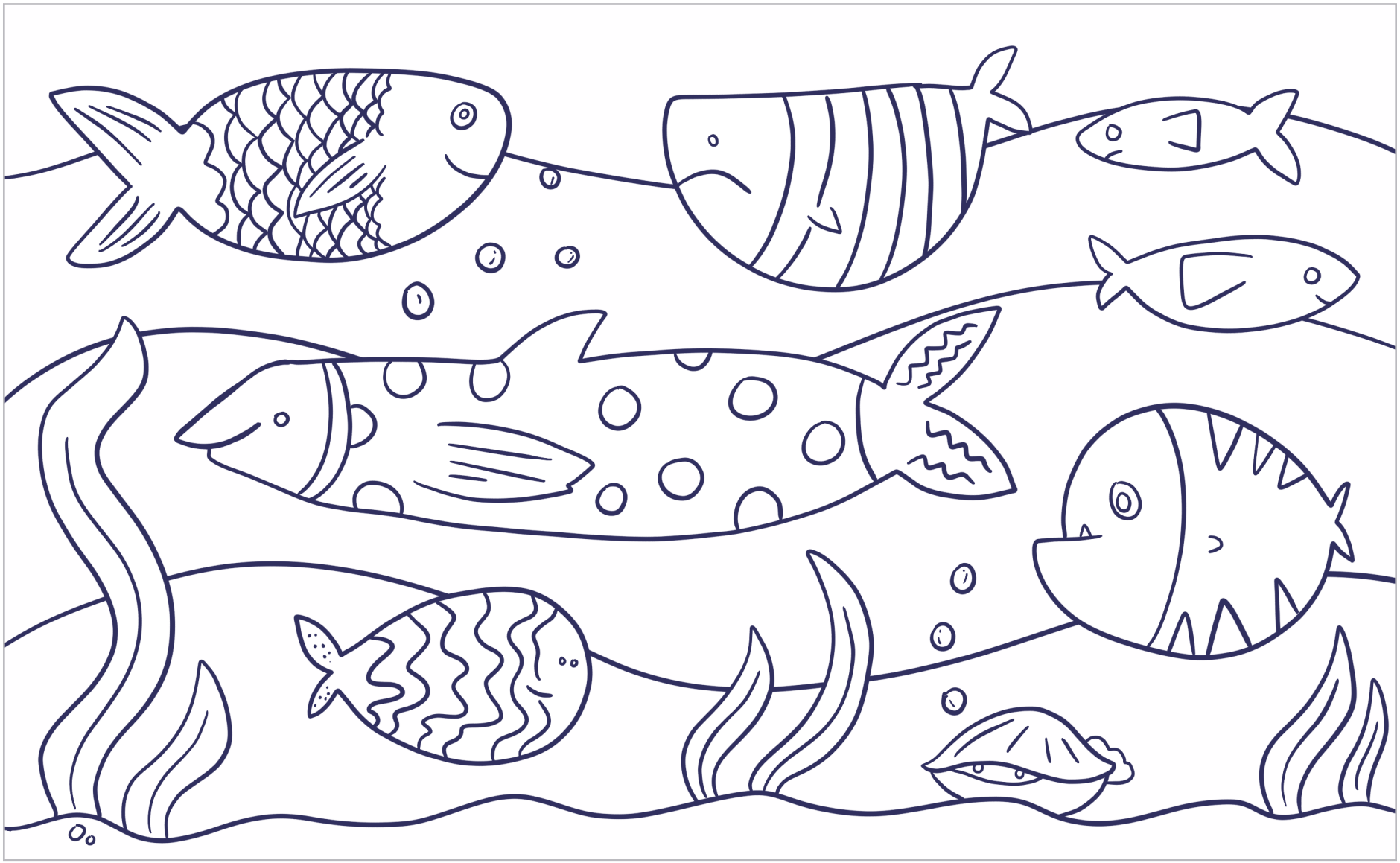
Create Fish Cards

Write the number word. Ask children to color the fish and write the number on each fish. Children can practice counting and ordering the fish cards.

Additional activities can be found in the following pages of this document.

Coloring Sheet

NAME



Drawing and Writing

NAME _____

Harry Bear counts fish. What can you count? Finish the sentence and then draw a picture of what you would count.

_____ **counts** _____.

Your Name — What you count together

Count the Fish

Answer the questions below using the illustration.

NAME _____

How many yellow fish are there?	
How many blue fish are there?	
How many long fish are there?	
How many short fish are there?	
How many wiggly fish are there?	
How many straight fish are there?	
How many big fish are there?	
How many small fish are there?	



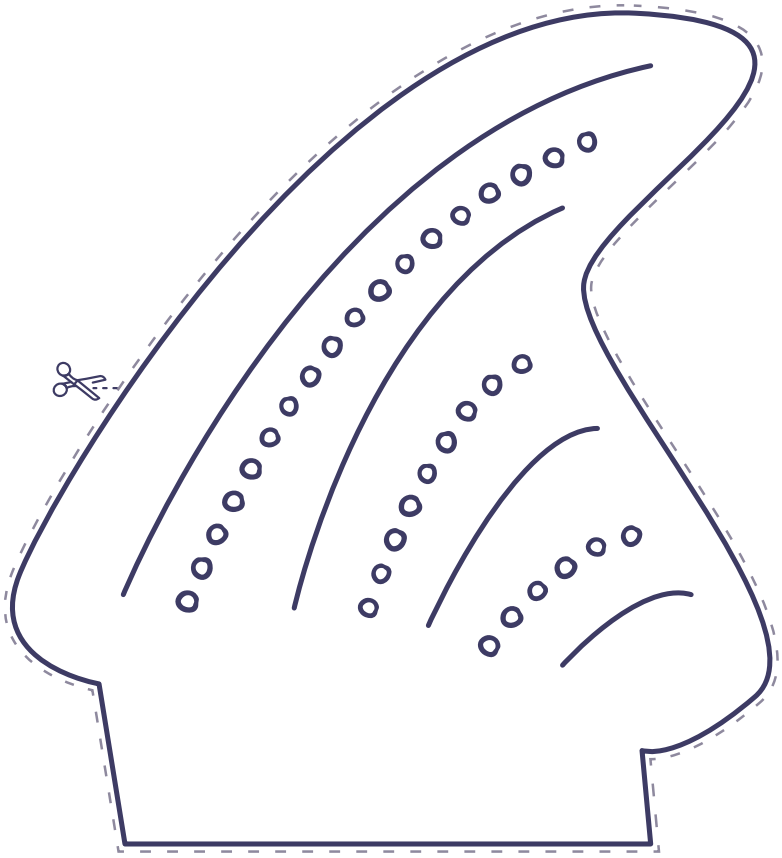
Fish Craft

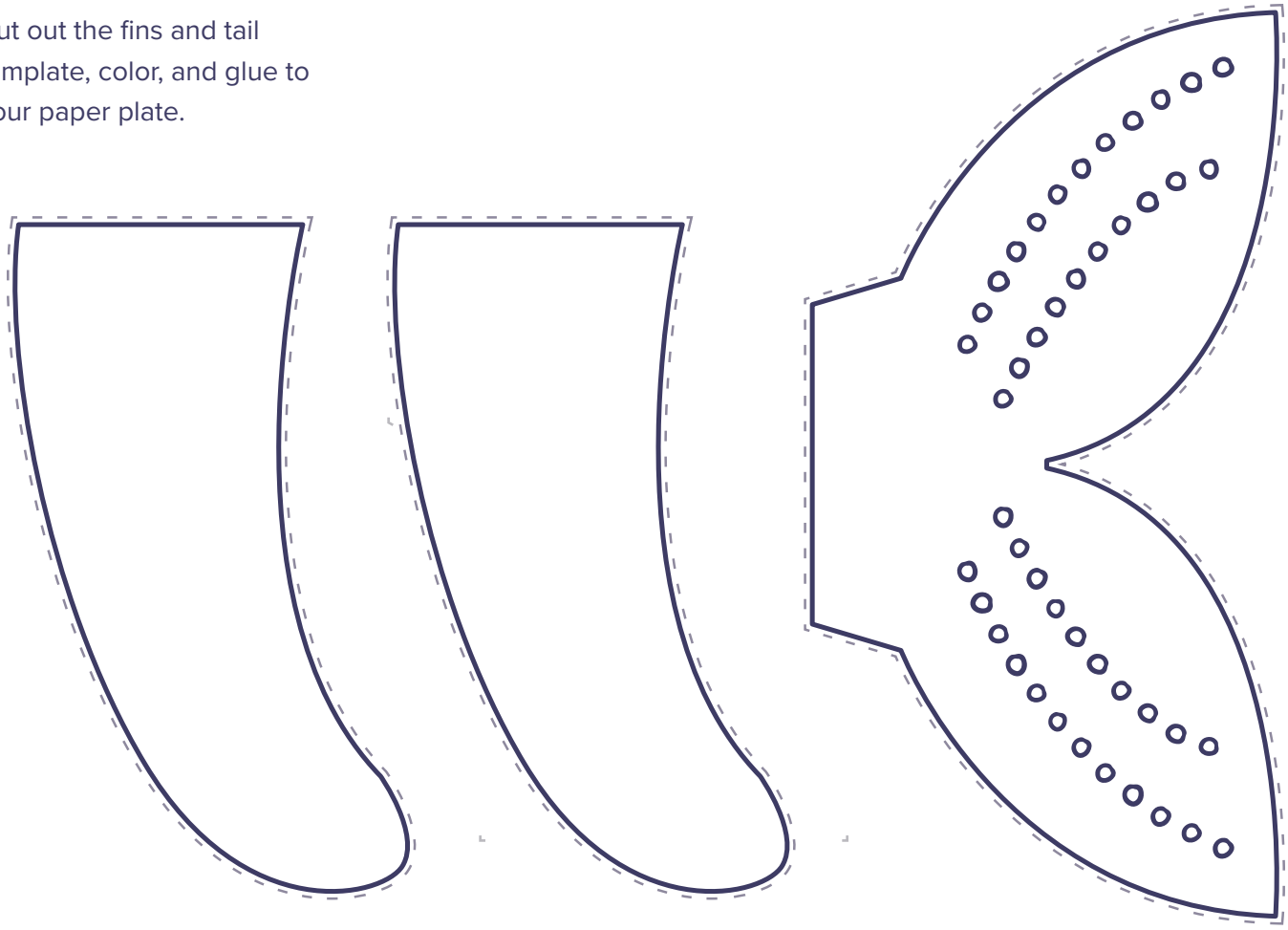
Materials

- Paper Plate
- Paint/Coloring Utensils
- Fins and Tail Templates
- Googly Eye
- Glue

Directions

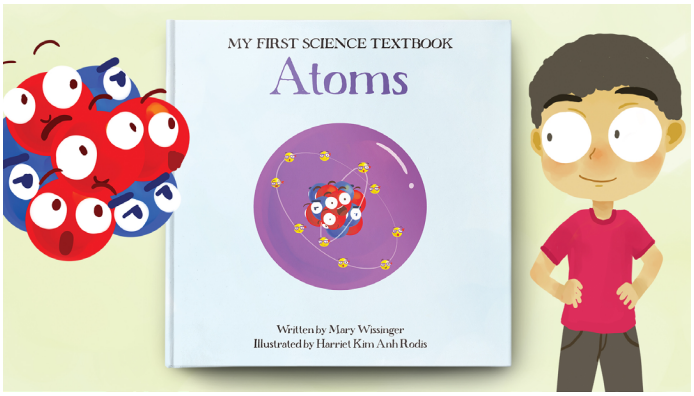
1. Paint or color the back of your paper plate.
2. Draw a mouth and scales on your paper plate and decorate using whatever decorations you would like.
3. Glue your google eye onto your plate.
4. Cut out the fins and tail template, color, and glue to your paper plate.





Day 3

Atoms: My First Science Textbook



Book Information

Run Time	4:20
Author	Mary Wissinger
Illustrator	Harriet Kim Anh Rodis
Narrator	Morgan Berry
Publisher	Science Naturally/2016
Ages	3–8/PreK–5
Genre	Nonfiction
Text Structure	Informational
Themes & Ideas	Atoms, periodic table, science
Language & Literary Features	Simple rhyming sentences
Sentence Complexity	Simple sentences
Vocabulary	squish, fore, universal, compose, speck, galaxies, universe
Special Vocabulary	atoms, protons, neutrons, electrons, nucleus, fluorine, lithium, fluoride, covalent bonds, iconic bonds, element, molecules, hydrogen, helium, chlorine, periodic table, atomic number, mass, chemical symbol
Illustrations	Vibrantly colorful science pictures

Story Summary

Science is fun! Learn all about atoms, the building blocks of matter. This silly and scientifically accurate story brings chemistry to life in a way that little ones will enjoy. From protons, to neutrons and electrons, the periodic table, and so much more; learning the basics of chemistry has never been more fun!

With a simple rhyming structure, colorful illustrations, and fun characters, this book turns complex principles into funny, age appropriate and easily understandable lessons. *Atoms: My First Science Textbook* makes science and chemistry fun and approachable for all ages.

Focus
Atoms

Activity Ideas

Atom Diagram

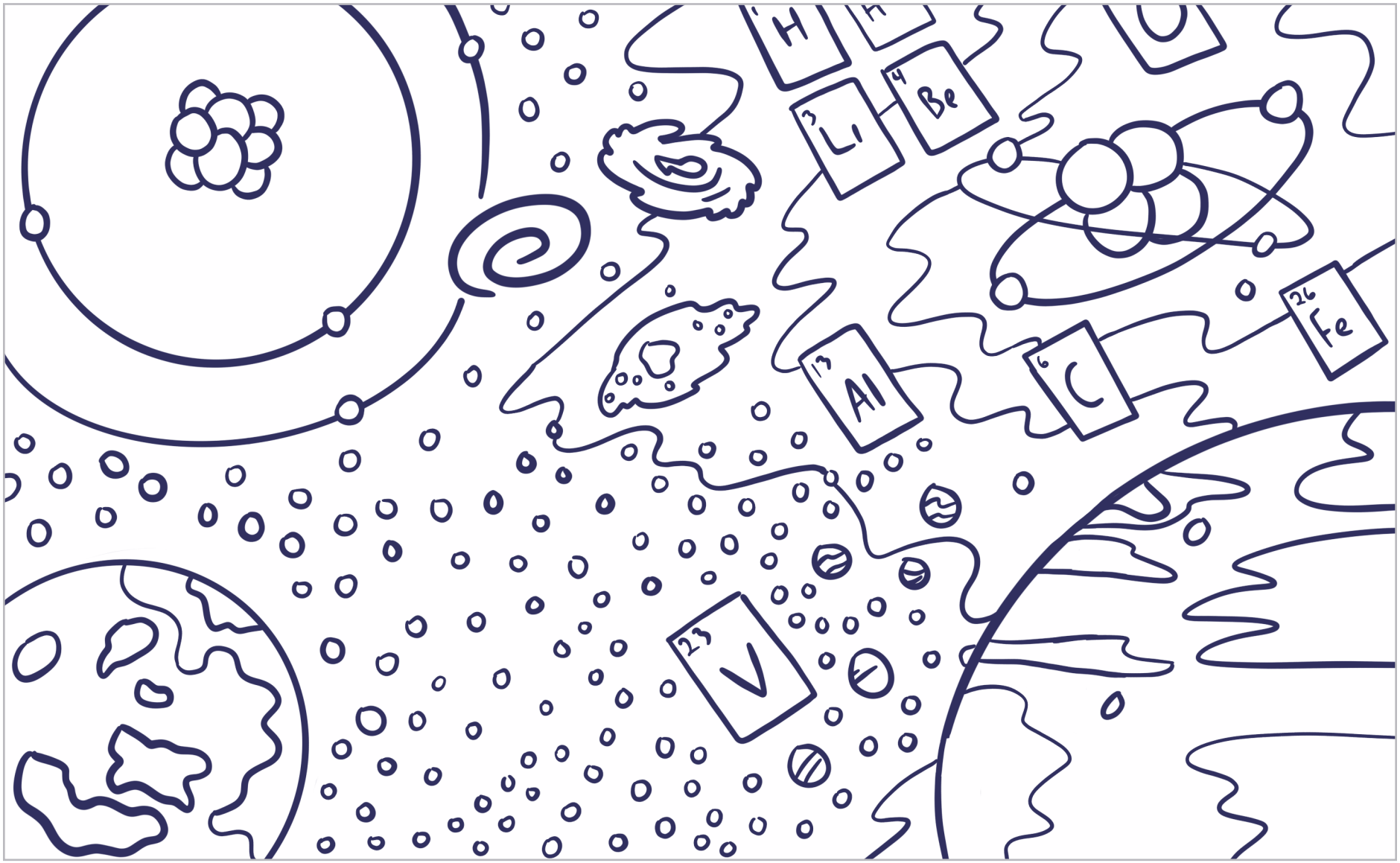
Provide a diagram of an atom: Ask children to label the parts.

Create Flash Cards

- This element can be found in a thermometer: Mercury
- Jewelry is made of this yellow element: Gold
- Diamonds are made of this element: Carbon
- A U.S. coin is made of this element and is named after it: Copper
- This element strengthens bones: Calcium
- This element causes balloons to float in the air: Helium

Additional activities can be found in the following pages of this document.

Coloring Sheet



Drawing and Writing

Imagine you are the size of an atom and standing next to a grain of salt. The grain of salt next to you would be the height of Mount Everest, the tallest mountain on Earth. Write a story about this adventure. Illustrate.

Atoms KWL Chart

Make a KWL chart about atoms.

1. Write down what you already **know** about atoms.
2. What do you **want** to learn about atoms.
3. Research to find the answers to your questions and write down what you **learned**.



Topic

Atoms

What I Know	What I Want to Know	What I Learned

Atom Craft

Materials needed

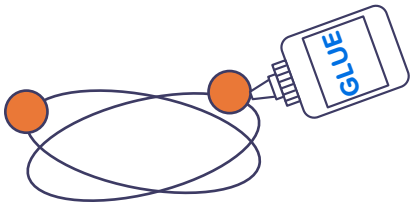
- craft pom-poms 2 of each color (**blue = protons**, **yellow = neutrons**, **orange = electrons**)
- craft wire
- hot glue gun or regular glue

Directions

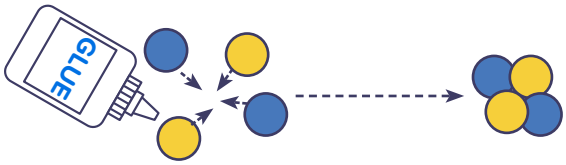
1. This is going to be a neutrally charged atom with 2 protons represented in blue pom-poms, 2 neutrons that are yellow pom-poms, and 2 orange pom-poms that are electrons.
2. Create your 2 electron paths by making 2 circles with the craft wire. Glue one of the orange pom-poms to each of the electron paths.
3. Create the nucleus of the atom by gluing the 2 blue protons and 2 yellow neutrons together to make a ball.
4. The electron path orbits the nucleus so place the nucleus (2 blue protons and 2 yellow neutrons) in the center of both circles.
5. Glue 2 stabilizing craft wire rods from your nucleus to the electron paths.
6. This atom model has two protons, two neutrons and two electrons which makes it Helium.



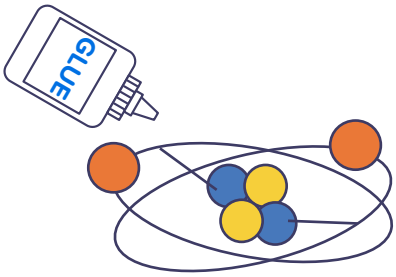
Step 1



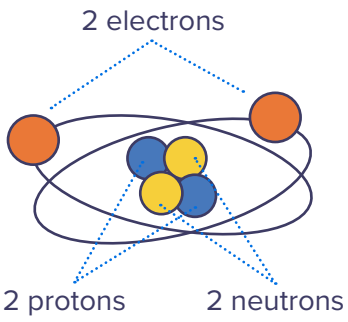
Step 2



Step 3



Step 3–5



This atom makes Helium

Step 6

Day 4

Slumberkins: Narwhal



Run Time	5:26
Author	Kelly Oriard and Callie Christensen
Illustrator	Theresa Thomson
Narrator	Jenee Crowther
Publisher	Slumberkins
Ages	2–8
Genre	Fiction
Text Structure	Second person narrative
Themes & Ideas	Pollution, community, teamwork, problem solving, growth mindset, responsibility
Language & Literary Features	Rhyme
Vocabulary	reef, clever, sea kelp, pristine, grim debris, intact, pinchers
Special Vocabulary	Pollution, community, teamwork, problem solving, growth mindset, responsibility
Illustrations	Favorite Slumberkins creatures make a difference in the world.

Story Summary

"If I see a problem, I can fix it... If I don't know what to do, I can always ask for help." In *Slumberkins: Narwhal* children swim along with Narwhal as he discovers how to make a difference in the world around him. Through problem-solving and recognizing when to ask for help, Narwhal learns to serve his community and team up with friends to do big things!

Focus
Problem Solving

Activity Ideas

Map
Make a map of the community you live in.

Writing
Write a story about the community you live in. Include why you like living there as well as problems your community might face.

Brainstorm
Create a list of problems in your community—brainstorm ideas about what can be done to solve the problems.

Additional activities can be found in the following pages of this document.

Coloring Sheet



Drawing and Writing

NAME _____

Narwhal noticed that there was a problem in his community and decided to act. Can you think of a problem in your community that you can help solve? Draw a picture and finish the sentences below.

One problem in my community is _____

_____.

I will help solve the problem by _____

_____.

About Me Dice



How to play

1. Cut the pattern out, fold on the solid lines and add glue to the angled tabs. Fold into a cube and let it dry.
2. Roll the dice.
3. Share your answer aloud.

Sequencing

NAME _____

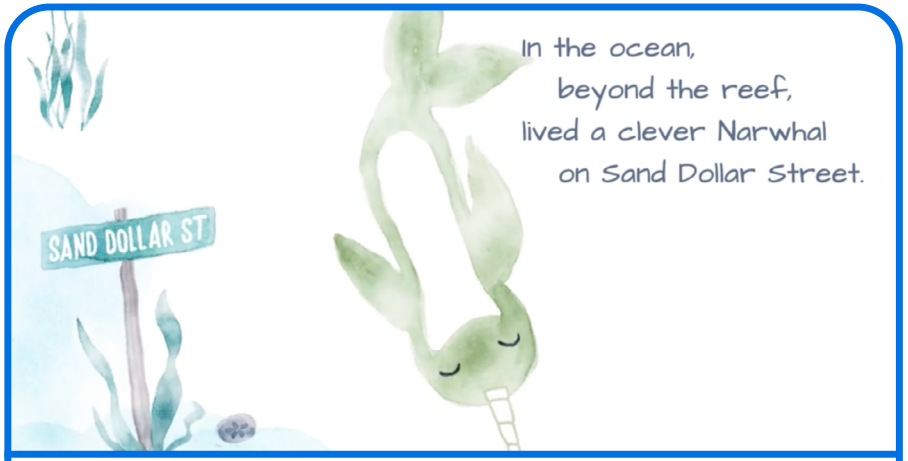
Place the 4 scenes from *Slumberkins: Narwhal* in the correct order by writing 1–4 in the spaces provided.



_____



_____



_____



_____

Day 5: Read Along Together

Inventors Who Changed the World



Run Time	8:30
Author	Heidi Poelman
Illustrator	Kyle Kershner
Narrator	Nyomi Schrater
Publisher	Familius
Ages	2–8/AD810L–1000L
Genre	Biography
Text Structure	Text divided into separate stories about each inventor and their discoveries
Themes & Ideas	Persistence, courage, belief in one's self, innovation, determination
Language & Literary Features	Accomplishments by the featured inventors are expressed in simple terms.
Sentence Complexity	Simple text: 2–3 syllable words
Vocabulary	delicate, bamboo, heretofore, exhausts, vaccine, radium, cancers
Special Vocabulary	gas lamps, printing press, electricity, paper making, microscope, Nobel Prize, number codes (computer)
Illustrations	Colorful, delightful artwork helps children see what the setting was like for these inventors, what they looked like, and how they dressed.

Story Summary

From the curiosity of Leonardo Da Vinci to the dedication and sacrifice of Marie Curie, Little Heroes: *Inventors Who Changed the World* is a young child's first introduction to the brilliant people who taught us the meaning of perseverance and innovation. Simple text and adorable illustrations tell the contributions of nine renowned inventors from around the world: Cai Lun, Johannes Gutenberg, Leonardo Da Vinci, Thomas Edison, Louis Pasteur, Marie Curie, Orville and Wilbur Wright, and Grace Murray Hopper. Inspire your own little inventor with the words of these inventive heroes who changed the world.

Focus
Inventions

Activity Ideas

Paint a Picture

Leonardo Da Vinci invented different ways to paint and became known as the most famous painter in the world. Have children use their creativity to paint their own picture using different paint strokes.

Phonograph Activity

Show a picture of a phonograph. Explain that the phonograph invented by Edison had two purposes: to record and to play. Have children record and play back "Mary Had a Little Lamb"—the first recorded words.

Additional activities can be found in the following pages of this document.

Day 5: Read Along Together

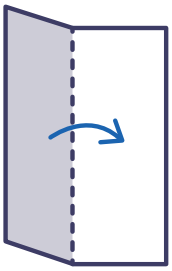
Create a Paper Airplane

Materials

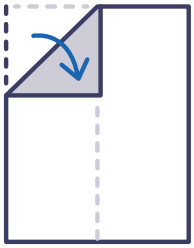
- 8 ½” x 11” sheet of paper
- Crayons or markers (optional)



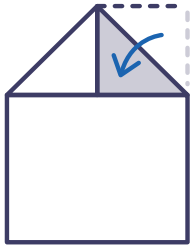
1. Start with an 8.5 x 11 sheet of paper.



2. Fold the paper in half lengthwise.



3. Open paper up, fold top left corner toward middle crease.



4. Fold top right corner toward middle crease.



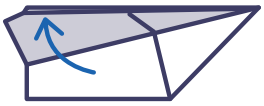
5. Close paper with folded edges inside. Position paper with point at the top.



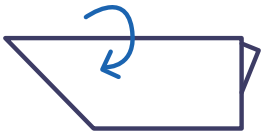
6. Rotate point of paper clockwise one quarter turn.



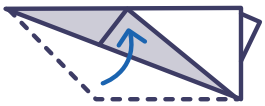
7. Fold bottom right corner of paper to meet top of paper.



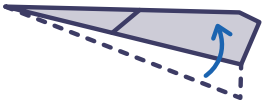
8. Fold bottom right corner to top a second time.



9. Flip paper over so the pointed corner is to the left.



10. Fold bottom left corner of paper to meet top of paper.



11. Fold bottom left corner to top a second time.



12. Hold paper by bottom center and open wings.

- Variations can be made to wings by folding at different angles.
- Draw some details: people in the plane, windows, etc. Fly the airplane like the Wright brothers!

Inventors Fact Sheet



Cai Lun

born in China (50 AD–121 AD)

- Invention/discovery: **paper making process**
- Inspired to make paper by watching wasps make their nests from strips of bamboo
- Smart and ambitious Chinese politician



Johannes Gutenberg

born in Germany (1395–1468)

- Invention/discovery: **moveable type printing press**
- German blacksmith, goldsmith, inventor, printer, publisher
- Invented the printing press (the most important invention of modern times) in 1439



Leonardo Da Vinci

born in Italy (1452–1519)

- Invention/discovery: **Invented ways to paint (the most famous artist in the world)**
- Drew plans for machines (submarine, helicopter, bicycle) that were later created
- Famous paintings: Mona Lisa, The Last Supper, The Vitruvian Man



Thomas Edison

born in Ohio, USA (1847–1931)

- Invention/discovery: **light bulb in 1879, phonograph, motion pictures**
- Partially deaf, he did not do well in school and was eventually homeschooled
- Set up his first lab in his parents' basement when he was 10



Louis Pasteur

born in France (1822–1895)

- Invention/discovery: **vaccinations (1885), pasteurization, proved that germs cause disease**
- Inspired to find a cure for infectious diseases after losing 3 children to typhoid fever
- Used microscopes to look for answers and discovered germs (helped save millions of lives)



Marie Curie

born in Poland (1867–1934)

- Invention/discovery: **polonium named after Poland, radium which became a cancer fighter**
- She was the first woman to become Professor of Physics at Sorbonne University in France
- First person to be awarded two Nobel Prizes (1903, 1911)



The Wright Brothers

Wilber born in Indiana, USA (1867–1912)
Orville born in Ohio, USA (1871–1948)

- Invention/discovery: **flew the first airplane (1903)**
- Ran a printing press business and a successful bicycle shop
- Were inspired by Leonardo Da Vinci to make their own helicopters and kites



Grace Murray Hopper

born in New York, USA (1906–1992)

- Invention/discovery: **programmed a room sized computer to respond to human language**
- One of the first modern computer programmers
- Took apart alarm clocks to see how they worked

Connecting Activity

NAME _____

Draw a line to match the inventor with their invention or discovery.



Cai Lun
Born in China (50 AD–121 AD)



Johannes Gutenberg
Born in Germany (1395–1468)



Leonardo Da Vinci
Born in Italy (1452–1519)



Thomas Edison
Born in Ohio (1847–1931)



Louis Pasteur
Born in France (1822–1895)



Marie Curie
Born in Poland (1867–1934)



The Wright Brothers
Wilber born in Indiana, USA (1867–1912)
Orville born in Ohio, USA (1871–1948)

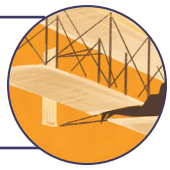


Grace Murray Hopper
Born in New York, USA (1906–1992)

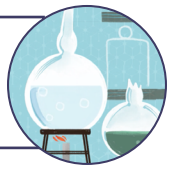
Discovered Radium



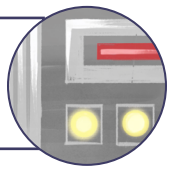
Flew the First Airplane



Discovered Germs



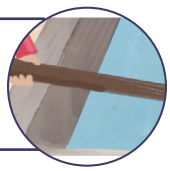
Programed Computers



Light Bulb



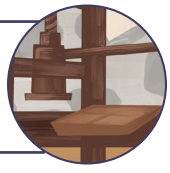
Paper Making Process



New Ways of Painting



Printing Press



Draw Yourself as an Inventor

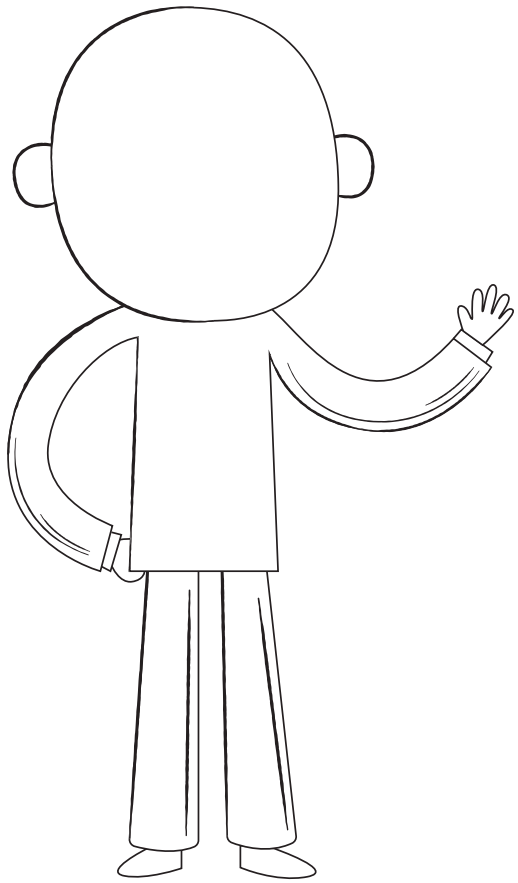
NAME _____

Now it is your turn to become an inventor who changed the world. Come up with an invention and write the name of it on the line below. Then describe how it is used.

My invention is _____ .

Here is how it is used: _____

_____ .



Now that you have invented something, draw what you and your invention would look like.

1. Draw your face and hair.
2. Draw the kind of clothes you wear while inventing.
3. Draw what gear or tools you need to invent your ideas.
4. Draw the invention you would like to create.