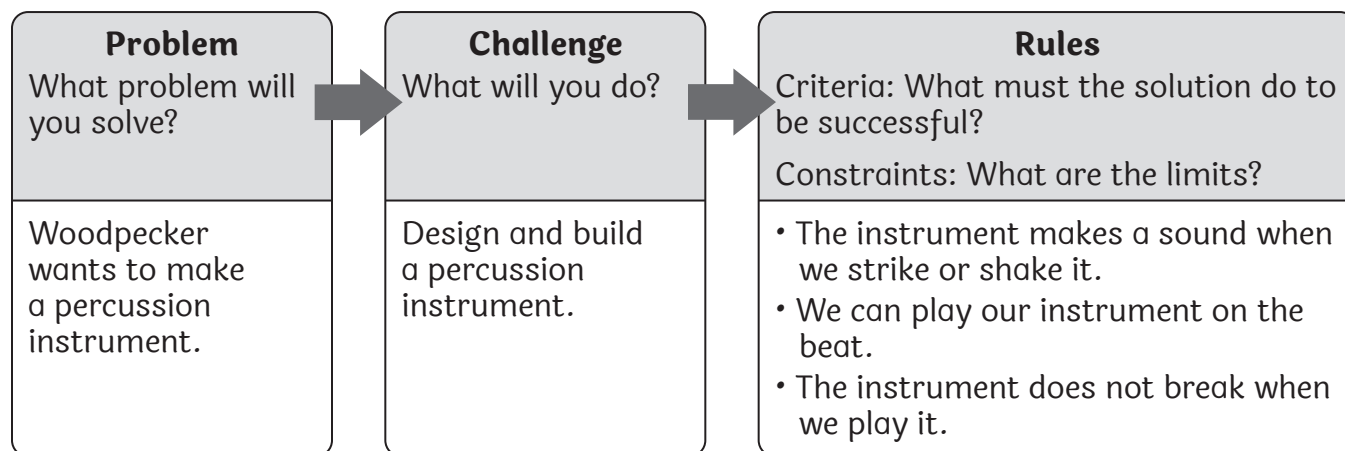


PLOT SUMMARY:

The forest animals listen every night to the music coming from the town. They sneak down to see the instruments, and they decide to make their own.

PERCUSSION INSTRUMENT CHALLENGE:



OTHER POSSIBLE PROBLEMS AND CHALLENGES:

Students can use the *Universal Challenge Pages* (pages 106–109) to create solutions to any of the problems below or problems they identify themselves.

Problem	Bear wants to make a string instrument.
Possible Challenge	<ul style="list-style-type: none"> Design, build, and play a string instrument.

Problem	Owl wants to make a wind instrument.
Possible Challenge	<ul style="list-style-type: none"> Design, build, and play a wind instrument.

MATERIALS:

Required: a metronome (can be found online for free)

Suggested: hollow materials such as plastic or paper cups, cardboard tubes, empty cans, plastic food containers, plastic eggs, plastic bottles; items to create strikers such as plastic cutlery, sticks from outdoors, craft sticks, chopsticks; small items for shaking such as dried beans, rice, or pasta, bottle caps, pebbles, beads, paper clips; connecting materials such as tape and glue

Optional: paints, markers, and other craft supplies for students to decorate their instruments

LESSON PLAN:

1. Have students read the passage and discuss the problems they identified. Use these questions as prompts:
 - Have you ever played an instrument? How did you play it?
 - How does Bear play his instrument?
 - How does Owl play her instrument?
 - How does Woodpecker play her instrument?
2. Introduce or review the three types of instruments. If possible, show a video of different instruments being played. You may want to make anchor charts listing instruments in each family.
 - **String** instruments are played by plucking or bowing on the strings. What are some string instruments you know? (guitar, banjo, violin, cello, autoharp, etc.)
 - **Wind** instruments are played by blowing into them. What are some wind instruments you know? (flute, trumpet, oboe, tuba, kazoo, vuvuzela, etc.)
 - **Percussion** instruments are played by shaking or striking them. What are some percussion instruments you know? (drum, tambourine, maracas, cymbals, claves, triangle, marimba or xylophone, etc.)
3. Introduce the Percussion Instrument Challenge to students by reading Step 1 (page 75) together. Tell students they will be making a **percussion** instrument. You may want to write the rules for the challenge on the board or a chart.
4. Ask students to think about what they know about percussion instruments that could help them in this challenge. Have students discuss the challenge and write or draw about their prior knowledge in the “What do we know about this?” section of Step 1 (page 75).
5. Each student will need an instrument. You may choose to have students complete this challenge individually, or let groups know that they should make enough copies of their design for each group member to have one.
6. Show students each available material and prompt them to think about how they could use it in this challenge. Give students a copy of Step 2 (page 76). Have them discuss their plan and then write or draw the materials they will use and what their percussion instrument will look like. Then give them access to the materials.

LESSON PLAN:

7. Give students time to build their percussion instruments. Circulate to observe and answer questions as students work on their solutions. When a team thinks their instrument is ready, give them a copy of Step 3 (page 77). Have them test their instruments by playing them in time to some music or a metronome. Then they should record their results and how they will improve their instruments.
8. Have students share their solutions with the class and get feedback from peers, then revise their designs and test again. Have them repeat the test-and-improve cycle until they are satisfied with their results.
9. When students have completed the challenge, have them explain their instruments to the class. If desired, offer paint, markers, and other craft supplies for students to decorate their percussion instruments. Play music and have the entire class play their instruments in time!
10. Have students fill out Step 4 (page 78).
11. If time, allow students to choose their own problem and testing setup and use the *Universal Challenge Pages* (pages 106–109) to complete their challenge.

NAME: _____

DATE: _____

Directions: Read the passage and underline the problems the characters have to face. Write and/or sketch your ideas for solutions in the margins.

FOREST FRIENDS BAND

Every night, the animals sat at the top of the hill. They listened to the music coming from the town below. Bear tapped his foot. The raccoon twins danced a jig.

“It’s so wonderful!” said Bear.

“Whooo knows how they do it?” asked Owl.

“Let’s go see!” said Woodpecker.

The animals went quietly into the town. They followed the music. It was coming from a house. The animals peered in the window. They saw three people. Each person was playing an instrument.

A man played a bass. It looked like a very big fiddle. The bottom rested on the ground. The man played standing up. He plucked on the strings with his fingers.

A woman was playing a flute. It looked like a stick with holes in it. She held one end up to her mouth. She blew into it. She moved her fingers on the holes.

A boy was playing a drum. It was big and round. He hit it with his hands. It made a big sound!

The animals stayed and watched. They loved the music. When the music was over, they went back to the forest.

“I want to make music!” said Woodpecker.

“But we don’t have any instruments,” said Owl.

“Can we make some?” asked Bear.

NAME: _____

DATE: _____

FOREST FRIENDS BAND

They all thought hard.

Bear said, "I want to make a bass. I want to play by plucking the strings." He lumbered away into the trees.

Owl said, "I want to make a flute. I'll play by blowing into it." She flew off into the forest.

Woodpecker said, "I want to make a drum. I'm very good at hitting things!"

Bear found a hollow log. He cut a hole in the side. He stretched some vines across the hole to make strings. When he plucked on the strings, it made a wonderful sound!

Owl found a reed by the pond. It had a hollow stem. She put some holes in the side. Owl blew into it to make a sound. She covered some of the holes with her feathers. It made music!

Woodpecker found a log. When she hit it with her beak, it made a sound. But the sound wasn't very loud. She tried many different logs. The sounds were dull. Finally, she tried a hollow log. It made a wonderful sound. She could play a beat!

The next day, the animals met on the top of the hill. The forest friends band practiced together. Bear plucked his strings. Owl blew into her flute. Woodpecker hit her drum. At first, their music didn't sound very good. They did not give up. They kept trying. They got better and better.

When they were ready, they played for the other animals. Everyone danced and sang along. Then everyone clapped as the forest friends band took a bow!

NAME: _____

DATE: _____

STEP 1: PREPARE FOR THE CHALLENGE**What will we do?**

We will make a percussion instrument.

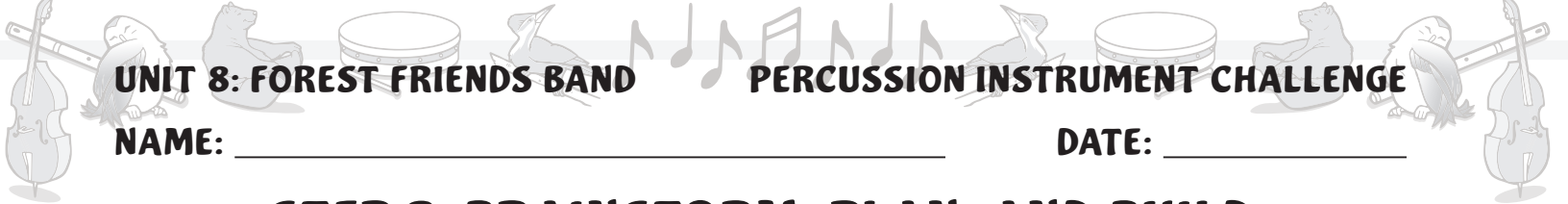
What are the rules?

- The instrument makes a sound when we strike or shake it.
- We can play our instrument on the beat.
- The instrument does not break when we play it.

How will we know it works?

We will know our instrument works when we can strike it or shake it on the beat and it doesn't break.

What do we know about this?



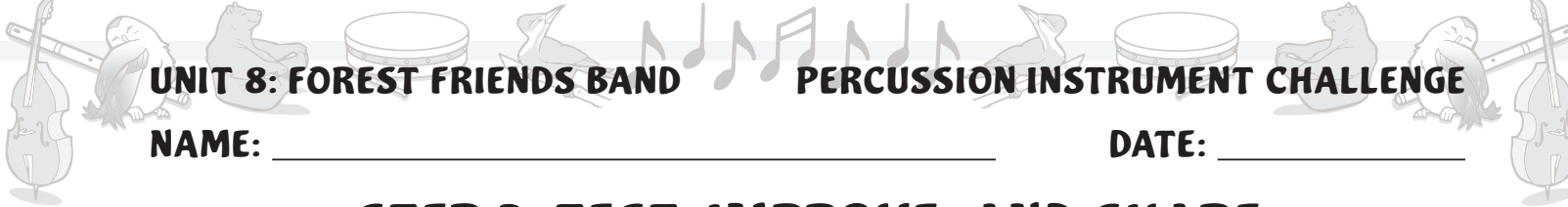
NAME: _____

DATE: _____

STEP 2: BRAINSTORM, PLAN, AND BUILD

What materials will we use to make our percussion instrument?

What will our percussion instrument look like?



NAME: _____

DATE: _____

STEP 3: TEST, IMPROVE, AND SHARE

Does our instrument make a sound when we strike or shake it?

Yes

No

Can we play our instrument on the beat?

Yes

No

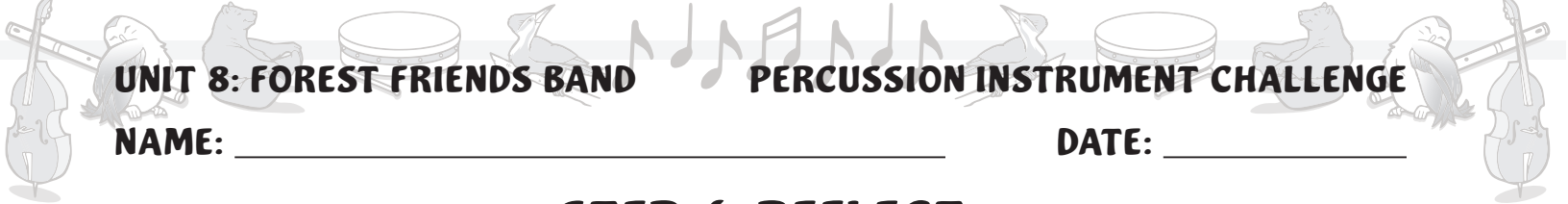
Did the instrument break when we played it?

Yes

No

How can we make our instrument better?

Share the instrument with the class. Make the instrument better until it meets all the rules!



NAME: _____

DATE: _____

STEP 4: REFLECT

How did you play your instrument?

How did you make your instrument better?

This part was easy:

This part was hard:

I learned this:
