

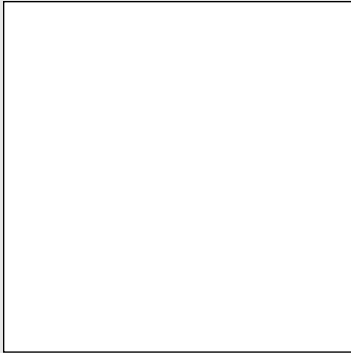
# Overview of the Concept: Measuring Capacity and Mass

## Book Summaries

Title	Level	Summary
At the Beach	D	In this illustrated realistic narrative, a family goes to the beach. The children, using sand pails, cups, and shovels, estimate and compare the capacity of containers while building a sandcastle at the beach.
The Guessing Game	G	In this illustrated realistic narrative, Kelly, Liam, and their grandpa play “The Guessing Game” at the fair. They must guess which two items balance to win the prize.
Half and Half	J	In this illustrated fantasy narrative, a boy teaches an alien how to share by dividing different things in half.

## Target Outcomes

WNCP	Ontario	APEF
<p>Shape and Space (Measurement)</p> <ul style="list-style-type: none"> <li>Estimate, measure, record, and compare the mass (weight) of objects, using nonstandard units.</li> <li>Recognize that different objects may have the same mass (weight).</li> <li>Estimate, measure, record, and compare the volume/capacity of containers, using nonstandard units.</li> </ul> <p>Number (Number Concepts)</p> <ul style="list-style-type: none"> <li>Demonstrate an understanding of simple fractional parts.</li> </ul>	<ul style="list-style-type: none"> <li>Identify relationships between and among measurement concepts (e.g., winter time—colder temperatures).</li> <li>Estimate, measure, and record the mass of objects using nonstandard units, and compare the measures.</li> <li>Estimate, measure, and record the capacity of containers using nonstandard units, and compare the measures.</li> <li>Represent fractions (halves as part of a whole) using concrete materials.</li> </ul>	<p>Shape and Space:</p> <ul style="list-style-type: none"> <li>Measure and understand basic concepts and attributes of length, capacity, mass, area, and time.</li> <li>Estimate and determine measurements in everyday problem situations and develop a sense of the relative size of units.</li> </ul> <p>D1 Identify procedures (not involving units) to compare and/or order lengths, capacities, and areas</p> <p>D2 Identify procedures (not involving units) to compare and/or order masses and durations of time</p> <p>D3 Identify and use nonstandard units to estimate and measure length, capacity, time, mass, and area</p> <p>Number Concepts/Number and Relationship Operations:</p> <ul style="list-style-type: none"> <li>Concretely explore common fractions and decimals in meaningful situations.</li> </ul> <p>A8 Demonstrate an understanding of simple fractional parts</p>



## At the Beach

### Before Reading

To play a guessing game with the students, decorate a large box with question marks. Inside the box put in a sand pail and a plastic shovel. Say, *There are two objects inside this box that you might use at the beach.* Ask, *Can you guess what they are?* Provide clues to help the students (e.g., they are plastic, children play with them). After they have guessed the contents of the box, encourage the students to tell about how and where they have used a plastic pail and shovel.

### Level D

#### Text Type

narrative (realistic)

#### Word Count

114 (not including speech balloons), 118 (including speech balloons)

#### High Frequency Words

a, and, are, did, going, good, have, here, how, is, it, look, made, of, some, the, this, to, we, will, with

#### Content Words

beach, pails, shovels, cups, sand, many, fill, red, yellow, less, used, sandcastle

#### Text Features

- 16-page book
- 1–2 lines of text per page
- strong picture clues
- illustrations
- speech balloons
- pictorial equations

#### Cross-Curricular Links

Social Studies

Drama

Music

### Previewing the Text

- Show the cover and discuss the picture. Elicit the word “beach” in your discussion. Read the title of the book aloud.
- Say, *This story is about a family trip to the beach. The children use their shovels, pails, and cups in the sand, and compare their sizes and shapes.*
- Support the students in a “book walk.” Discuss the pictures to help students access the meaning of the text, and introduce any unfamiliar vocabulary, expressions, and language structures.

**Pages 2–3:** Ask, *What do you notice about the pails the children are carrying to the beach?* (different colours, different sizes) *What is inside the pails?* (elicit shovels and cups)

**Pages 4–5:** Say, *The parents have found a good spot on the beach.* Ask, *What are the children filling the cups with?*

**Pages 6–7:** Ask, *What are the children doing with the cups of sand?* (filling the pail) Point out the speech balloons to the students and explain their purpose. Ask, *What do you think the children are trying to find out?* (how many cups it will take to fill the pail)

**Pages 8–9:** Ask, *How many cups of sand did it take to fill the red pail? How do you know?* (picture, text, and pictorial equation)

**Pages 10–11:** Ask, *How many cups do the children think it will take to fill the yellow pail? Why do you think their guesses are less than for the red pail?*

**Pages 12–13:** Ask, *How many cups did it take to fill the yellow pail? Which pail holds less sand—the red one or the yellow one?*

**Page 14:** Ask, *What are the children doing with the yellow pails now?*

**Page 15:** Ask, *How many yellow pails did it take to fill the red pail? How do you know?*

**Page 16:** Ask, *What have the children made?* Elicit the word “sandcastle.” Ask, *What question do you see on this page?*

## Reading the Text

Encourage students to read the book independently, at their own pace. Remember that subvocalizing (reading softly out loud) by early readers is to be expected and is often helpful. Observe and assist individual students as necessary. Give specific praise to students you observe using reading strategies.

## Revisiting the Text

You may choose to do only some of these activities, over several days.

- Encourage the students to reread the book together as a group, independently, or with a partner.
- Look closely at page 16 and revisit the question. Ask, *How many cups of sand did it take to build the sandcastle?* (a total of 52; 22 individual cups, 2 yellow pails [10 cups], and 2 red pails [20 cups]) Help the students add up the total number of cups by recording their findings on chart paper.
- Have the students respond to questions such as the following:  
*How many cups did it take to fill the red pail?*  
*How many cups did it take to fill the yellow pail?*  
*How many yellow pails did it take to fill the red pail?*  
*Who made the better guess about how many cups would fill the red pail—the girl or the boy?*

The students could make a pictorial number sentence for each of the first three answers.

- Ask the students to go through the book again, focusing on the actions of the little girl on the odd-numbered pages. Talk about what she is doing (trying to lift each of the containers full of sand) and what the results are. Have the students write speech balloons for the girl to tell what she is thinking.
- Distribute **BLM 9-1: Pails and Cups** to the students. Read the instructions, and have the students colour the red pail and the yellow pail at the top of the page, then all the other red and yellow pails on the page. The students then look at each partial equation and at the strips at the bottom, and match them up to complete the pictorial equations correctly.

## **Extending Activities**

### **Predict and Prove Capacity**

Show the students a few different-sized pails and cups. Create a two-columned chart, labelling one column “What We Predict,” and the other column “What We Learned.” Choose one of the pails, and one of the cups, and pour one cup of water or sand into the pail. Then ask the students to predict the number of cups of sand or water that the pail would hold. Fill in the students’ predictions on the chart. Then ask volunteers to confirm the predictions by measuring the capacity of the pail.

### **Container Comparison**

Set up sand and/or water centres for the students to explore the concept of capacity. Provide a variety of containers and time for the students to experiment. Ask the students to compare the capacity of one container with that of one or two others. Encourage the students to present their findings to the group.

## **Cross-Curricular Links**

### **Social Studies**

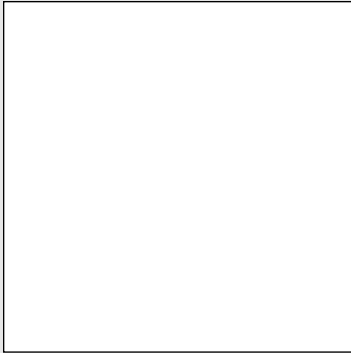
Say, *In this book, the family visited the beach for the day.* Review the question words (who, what, when, where, why) with the students. Ask the students to write or draw a story about a real or imaginary family trip, responding to the question words in their story.

### **Drama**

Divide the class into small groups and have them re-examine the pictures in the book. Ask each group to act out the story, providing dialogue for each of the characters as the story unfolds. Encourage the students to bring costumes and props from home (e.g., pails and cups).

### **Music**

Fill several equal-sized jars with different amounts of water. Invite the students to tap the rim of each jar with a pencil, and listen for the sound the jar makes. Ask the students to put the jars in order by pitch, from lowest to highest, and then draw the jars showing their respective amounts of water. Ask the students to label their drawings, showing “lowest sound/more water” at one end, and “highest sound/less water” at the other end. The students may want to make up a song using the jars to share with the class.



## Level G

### Text Type

narrative (realistic)

### Word Count

175 (not including print within illustrations), 223 (including print within illustrations)

### High Frequency Words

a, about, and, are, as, at, did, he, her, is, in, it, no, not, now, of, on, put, she, so, that, the, then, there, they, to, will, with

### Content Words

fair, prizes, The Guessing Game, guesses, baseball, balance, heavier, jellybeans, heavy

### Text Features

- 16-page book
- 1–8 lines per page
- illustrations
- moderate picture clues
- thought bubbles
- print within illustrations
- italics

### Working with Words

Short and Long “a” Sounds

### Cross-Curricular Links

Mathematics

Social Studies/Drama

# The Guessing Game

## Before Reading

Show the students a balance scale and review its use. Have small objects of different masses available to weigh. Show the students two of the objects and ask them to predict which of the two is heavier (e.g., Ask, *Which do you think is heavier, the eraser or the pencil?*). Confirm the students’ predictions by placing the items on the balance. Compare the mass of several other objects.

## Previewing the Text

- Show the students the cover of the book and discuss the art. Tell the students that the story is set at a fair. Read the title to the students.
- Say, *This is a story about Liam, Kelly, and their grandpa who play a guessing game at a country fair.*
- Support the students in a “book walk.” Discuss the pictures to help students access the meaning of the text, and introduce any unfamiliar vocabulary, expressions, and language structures.

**Pages 2–3:** Point out Liam, Kelly, and their grandpa in the picture. *How do you think Liam and Kelly are feeling?* (elicit or give “excited”) Have the students say the word “excited” to hear its sounds, and then locate it on the page.

**Pages 4–5:** Ask, *What different activities do you think there are at the fair?* (elicit “rides,” “food,” “games,” “prizes”) Say, *Kelly is hoping to win a prize. Ask, What game do Kelly and Liam want to play? How do you know?* (picture and text) Read the signs on the booth aloud to explain that the children have to guess which two different items will balance.

**Pages 6–7:** Ask, *What is on one side of the balance? What does Liam want the man to put on the other side of the balance? Do you think that one will be heavier or do you think they will balance?*

**Pages 8–9:** Ask, *Did Liam win? Which item is heavier? Say, Check the words to find out who will try next.*

**Pages 10–11:** Ask, *What two items does Grandpa guess will balance? Do you think that one will be heavier or do you think they will balance?*

**Pages 12–13:** Ask, *Did Grandpa win? How do you know? Which item is not as heavy as the other? Who will take the next turn guessing?*

**Pages 14–15:** Say, *Look at the thought bubbles on page 15. Kelly knows that two of the items are heavier than the baseball. Ask, Which two different items does she guess will balance?*

**Page 16:** Ask, *Did Kelly win? What did she win?*

## Reading the Text

Encourage students to read the book independently, at their own pace. Remember that subvocalizing (reading softly out loud) by early readers is to be expected and is often helpful. Observe and assist individual students as necessary. Give specific praise to students you observe using reading strategies.

## Revisiting the Text

You may choose to do only some of these activities over several days.

- Divide the students into pairs and have each one retell the story to their partner using the pictures as a guide.
- Encourage the students to reread the book together as a group, independently, or with a partner.
- Ask the students to refer to the book to answer questions such as the following:  
*Who thought the jellybeans and the baseball would balance?*  
*Which was heavier—the baseball or the toy dog?*  
*What two things did Kelly think would balance?*  
*Which was the least heavy—the dog, the baseball, or the jar of jellybeans?*
- Discuss what the following terms mean, in reference to a story—title, characters, problem, setting, and ending. Have the students complete **BLM 9-2: Story Web**. The students may work in pairs to complete the information.

## Working with Words: long and short “a” sounds

Discuss the difference between long “a” and short “a” sounds. Ask the students to complete **BLM 9-3: Sort “a” Sounds** by searching the text and recording the long “a” and short “a” sounds in the appropriate columns. (long “a”: games, play, game, baseball; short “a”: at, Grandpa, and, Liam, a, that, balance, man, than, as, about)

## Extending Activities

### Weigh the Items

Together as a class, compare the weight of the items that are in the guessing game in the book (baseball, jar of jellybeans, toy dog) on the balance. Record the results on chart paper, and compare the outcome to what happened in the book. Discuss possible reasons for any variation in the results.

### Create a Game

Divide the students into small groups, and challenge them to think of a new game for the fair. Have the students create a list of rules and/or a list of steps for playing their game. The students can also create a poster to advertise their game.

## Cross-Curricular Links

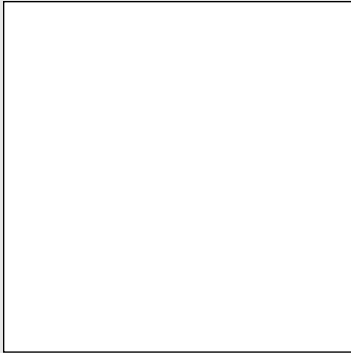
### Mathematics

Divide the students into groups and give each group a balance scale. Give each group three items that will fit on their balance scale. Have each group decide upon one item to compare with the others. Then ask each student to create a chart (as below) to write down their predictions about whether the chosen item will be heavier or lighter than the other items. While comparing the weight of the three items as a group, have the students record the outcomes on the chart, and determine if their prediction was right.

Prediction	Outcome	Yes or No?

### Social Studies/Drama

Brainstorm with the students a list of things there are to do at a fair, such as go on rides (e.g., merry-go-round, Ferris wheel), eat at food stands (e.g., hot dogs, popcorn, pizza), play games, see shows, and buy things at sale booths. Have individual students choose one activity from the list and pantomime the action for the others to guess. You might model an example by pretending to buy a hot dog, put mustard and relish on it, take a bite, and wipe your chin.



## Level J

### Text Type

narrative (fantasy)

### Word Count

384

### High Frequency Words

a, about, all, am, and, are, as, but, came, can, come, did, do, don't, eat, for, go, good, have, he, his, I, in, is, it, like, look, make, me, mom, my, no, not, now, of, on, out, put, said, see, she, some, the, them, there, they, this, to, up, very, was, want, we, went, what, where, who, will, with, yes, you, your

### Content Words

spaceship, alien, share, half, banana, milk, playdough, fair, balance, heavy, dream

### Text Features

- 16-page book
- 1–12 lines per page
- illustrations
- moderate picture clues
- dialogue
- italics
- print within illustrations

### Working with Words

Compound Words

### Cross-Curricular Links

Mathematics

Art

# Half and Half

## Before Reading

Divide the students into pairs. Give each pair a ball of playdough and challenge them to divide the playdough equally between them. Ask them to think about how they would prove that the two halves were equal. Give the students a few minutes to do the activity. Bring the class back together and discuss their ideas. Label the playdough with the students' names and save for future reference.

## Previewing the Text

- Show the cover of the book and read the title. Discuss the art.
- Say, *This story is about a boy named Tony who is visited by an alien named Al. Tony teaches the alien how to divide different things in half.*
- Support the students in a “book walk.” Discuss the pictures to help students access the meaning of the text, and introduce any unfamiliar vocabulary, expressions, and language structures.

**Pages 2–3:** Ask, *What did Tony see outside his window? How do you think Tony felt?* Use the phrase “He couldn’t believe his eyes” in your discussion, to familiarize the students with the expression. Ask, *Why do you think the alien came to visit?* Direct the students to locate the compound words on these pages and discuss the various parts of these words. (spaceship, backyard, outside)

**Pages 4–5:** Say, *Tony wants to share the banana with the alien. Find the words on the page that tell how much each of them will get.* Explain to the students that the phrase “half for you and half for me” appears several times in the book and must be read quickly. Allow time for the students to practise reading the phrase quickly.

**Pages 6–7:** Say, *Tony explained that he broke the banana into two halves. Ask, How did he explain what half is?* Say, *Al thought that the banana tasted delicious. Ask, Can you find the word “delicious” on the page?*

**Pages 8–9:** Ask, *What are they sharing now? How much has Tony given Al? How do you know?* (picture and text) Elicit or give the word “amount” in your discussion. Ask the students to locate the two italicized words on the page and read those sentences with appropriate emphasis.

**Page 10:** Ask, *Why are Tony and Al licking their lips? What does Al say about the milk?*

**Page 11:** Say, *Tony and Al are not in the kitchen anymore.* Ask, *Where do you think they are now?* Ask the students to speculate what Al is holding in his hand or read the page to find out. Ask, *What is on the table? What do you think they are going to do with the balance?*

**Pages 12–13:** Ask, *Is the playdough divided into two equal halves? How do you know?* (picture and text) *Whose side is heavier?*

**Pages 14–15:** Ask, *Is Al’s playdough just as heavy as Tony’s on page 14?* Read the sentence on page 15 containing the ellipses with the students to model the pause.

**Page 16:** Ask, *Do you think the alien really visited Tony or did something else happen?* (elicit “dream”) *Why do you think that?*

## Reading the Text

Encourage students to read the book independently, at their own pace. Remember that subvocalizing (reading softly out loud) by early readers is to be expected and is often helpful. Observe and assist individual students as necessary. Give specific praise to students you observe using reading strategies.

## Revisiting the Text

You may choose to do only some of these activities, over several days.

- Divide the students into groups of three. Ask each group to reread the text, taking turns playing the roles of the narrator, Tony, and Al.
- Ask the students to show you their favourite page of the story. Have the students describe what is happening on the page.
- Ask the students to recall the five major events of the story and record them on chart paper (Al’s spaceship landing, sharing the banana, sharing the milk, sharing the playdough, Al’s spaceship leaving). To create a storyboard, ask the students to fold a piece of paper into six squares and number each square. Have the students write the title of the story in the first square. In each of the following squares, ask the students to illustrate the story in the correct sequence. Provide time for the students to orally share their storyboards with other students.
- Point out the speaker tags on page 3 to the students. Ask the students to find other speaker tags in the remainder of the book. (said, asked, smiled, laughed) For each speaker tag, have the students write a sentence using the word.

## **Working with Words: compound words**

Review compound words with the students, providing several examples (e.g., crosswalk, basketball). Ask the students to record the compound words from this story. Then, working in pairs, have the students take turns reading their compound words and identifying the two smaller words within each word. (spaceship, backyard, outside, inside, bedroom, playdough, into) Have students write their compound words on separate strips of paper and cut them into the two words. They can then scramble the little words and put them together again as compound words.

## **Extending Activities**

### **Sharing with an Alien**

Discuss other things that the students would like to share with a visiting alien. Emphasize the importance of choosing things that can be split exactly in half, so that each share is fair. Record the students' ideas on chart paper. Ask the students to create four-page books describing what they would share with an alien.

### **Teach the Alien**

Recall Al's misunderstandings in the book with the students (eating milk, drinking playdough). Discuss how Tony had to explain to Al what to do with different things because he was from another planet. Ask the students to complete **BLM 9-4: Teach the Alien** by choosing words from the list at the bottom of the page that best complete the sentences.

## **Cross-Curricular Links**

### **Mathematics**

Discuss the picture on page 14 of the text and focus the students' attention on the concepts of capacity and mass. Ask, *Do these two things weigh exactly the same amount, even though they are different shapes?* Challenge the students to make two different shapes out of a piece of playdough that weigh the same. The students then check their playdough shapes on a balance.

### **Art**

Ask the students to imagine what life might be like on Al's planet. Discuss what the aliens might eat, drink, and play with. Ask the students to work in small groups to make posters illustrating the aliens' planet. They can also draw what they think the aliens' homes would look like, what their vehicles would look like, and so on. Display the posters in the classroom.

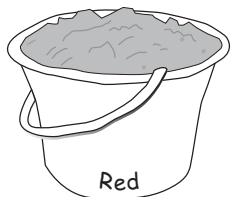
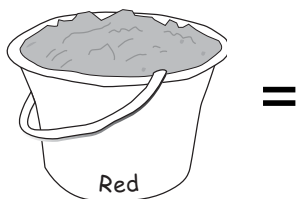
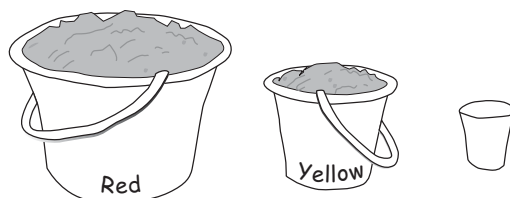
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Date: \_\_\_\_\_

# Pails and Cups

Colour all the pails.

Cut the strips at the bottom. Glue them beside the matching containers.

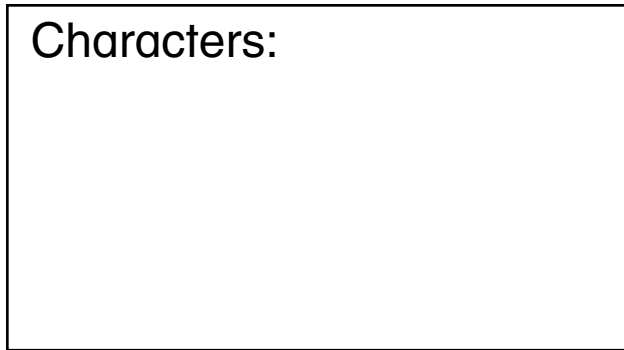


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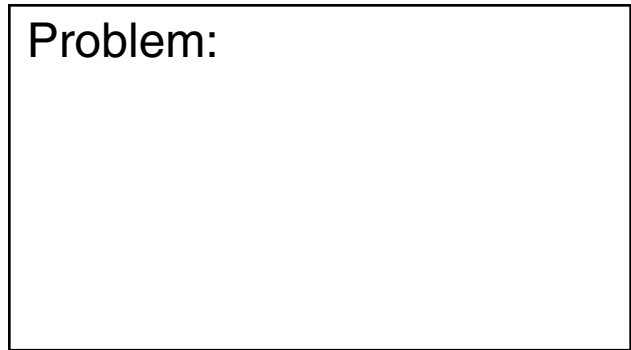
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# Story Web

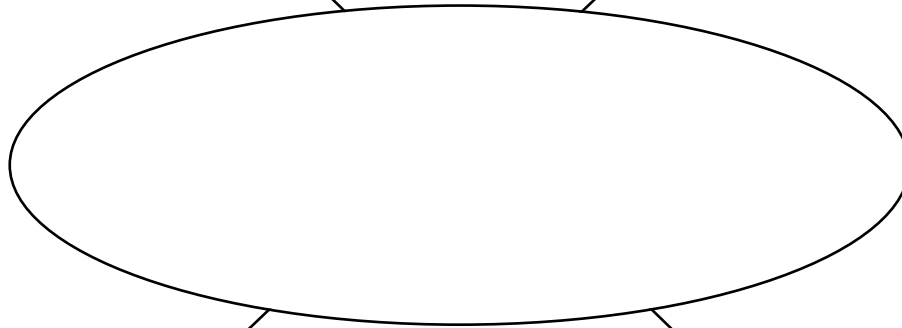
Characters:



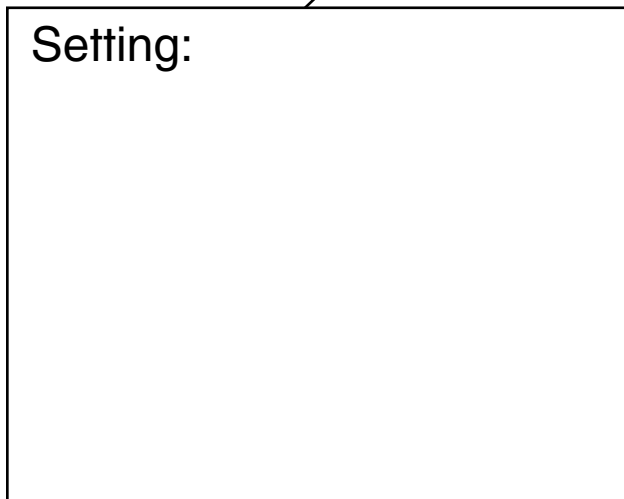
Problem:



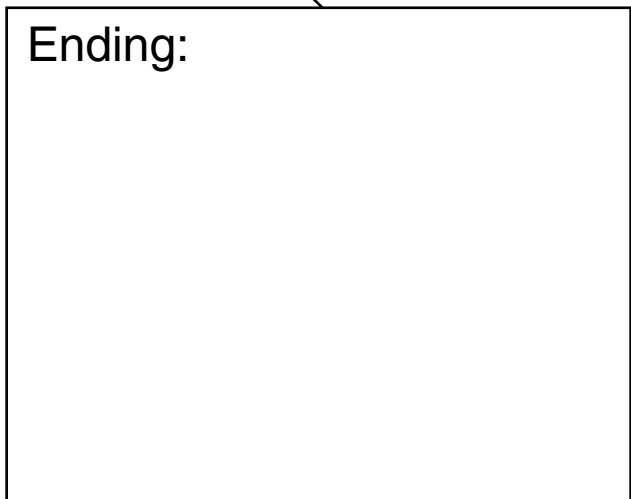
The Title



Setting:



Ending:





Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Teach the Alien

Choose the best words to complete the sentences.

wear	drink	eat	walk
play	read	bounce	drive

How would you explain to an alien what to do with ...

... an apple?	You _____ it.
... orange juice?	You _____ it.
... a book?	You _____ it.
... a toy car?	You _____ with it.
... a shirt?	You _____ it.
... a ball?	You _____ it.