**Underlined Words**

Some of the words in stories you will read must be spoken loudly.
Here's the rule about words that must be spoken louder than other words: **The words that must be spoken louder are underlined.**

The following are sentences with underlined words. Say the underlined words in a loud voice. Say the other words in a soft voice.

- a. That is wrong.
- b. You are a crook.
- c. I am not a crook.
- d. I'm tired of reading.
- e. My name is Sam.
- f. My name is Sam, too.
- g. This book is hard.
- h. If you think your book is hard, try reading this book.
- i. You sure like to talk.

**Back in the Lifeboat**

The lifeboat was floating on a bright, shining sea. The sea was so calm that it looked almost as if it was made of glass. When Edna looked down, she could see different colors. Where the water was not very deep, the color was green. Deeper spots were blue, with the deepest spots dark blue. The sun pounded down on the girls. Edna had blisters on her hands from rowing, but she was not rowing now. She was just sitting. In the far distance, a billowing cloud rose high into the sky. Edna could no longer see the island.
As she sat there in the lifeboat, she realized that they didn’t have supplies. There were no other islands in sight. The boat seemed to be drifting in a current, and the current was taking the boat to the west. But how long would it be before the girls spotted another island? What would they do if they didn’t find land soon? Edna was already starting to feel thirsty. She tried not to think about it, but when she swallowed, she noticed that her throat was dry.

Neither Edna nor Carla had said anything for a long time. The adventure they had on the island was so unreal that Edna didn’t know what to say.

Suddenly, Edna noticed that the boat was drifting faster. When she looked to the west, she got a very sick feeling. In the distance, she could see the rim of a whirlpool.

The boat was moving toward it, speeding faster and faster, through the green water.

The rushing sounds got louder and louder. Now the boat was moving over the rim of the whirlpool. “Hang on,” Edna shouted, as she grabbed on to the side of the boat. She hung on with all her might. The boat sped around and around and around. Edna looked up at the sky. The clouds seemed to be spinning around and around. The boat was going deeper and deeper into the whirlpool.

Now Edna could see a great cone of water above the boat. The boat was spinning so fast that its force pressed Edna against the bottom of the boat. She felt sick and dizzy. She squeezed her eyes closed as tightly as she could. Then the sounds seemed to fade away and everything went dark.
Heat. Terrible heat. "Where am I?" Edna said aloud. Then she realized that she was lying in the bottom of the lifeboat. The sun was beating down on her face. The boat was not moving. As she sat up, she realized that there was some water in the bottom of the boat. The water was very warm.

Edna looked over at Carla. "Are you okay?" Edna asked.

Carla looked very sick. "I think so," she said. "What happened?"

"I don't know," Edna answered. "We were in a whirlpool. That's the last thing I remember. Are we dead?"

"I don't think we're dead," Carla replied. "But I don't remember how we got out of the whirlpool. I passed out."

"I passed out, too," Edna said. Slowly, she turned around and looked at the ocean. It was perfectly calm. She didn't see any signs of whirlpools. And she didn't see any billowing clouds that marked the island. "We must be far from the island," Edna said.

Edna looked over the side of the boat, into the water. It was very dark blue. She could see some fish swimming around beneath the boat. They seemed to like staying in the shadow of the boat. As Edna looked at the fish, she remembered something she had once read. Fish have a lot of fresh water in them. If you chew on raw fish, you can squeeze the water out. Edna didn't like the idea of chewing on raw fish, but she knew that without water, she and Carla would not last for more than a few more hours in the hot sun.
Number your paper from 1 through 23.

Skill Items

Write the word or words from the box that mean the same thing as the underlined part of each sentence.

<table>
<thead>
<tr>
<th>shriek</th>
<th>breath</th>
<th>swift</th>
<th>armor</th>
</tr>
</thead>
<tbody>
<tr>
<td>skeletons</td>
<td>an instant</td>
<td>a sense</td>
<td>tangle</td>
</tr>
</tbody>
</table>

1. The animal bones were near the big old tree.
2. He was afraid for a moment.
3. The runner was very fast.

Review Items

4. Write the letters of the 3 things you find in the Bermuda Triangle.
   a. sudden storms
d. mountains
   b. whirlpools
e. streams
c. ice floes
   f. huge waves

5. Write the letter of the footprint made by the heaviest animal.
6. Write the letter of the footprint made by the lightest animal.

7. How long ago did dinosaurs live on Earth?
   - 10 million years ago
   - 100 million years ago
   - 100 thousand years ago

8. Two things happen to melted rock when it moves down the sides of a volcano. Name those 2 things.

9. What is it called when the earth shakes and cracks?
10. The earth makes a circle around the sun one time every ___.

11. How many days does it take the earth to make one full circle around the sun?

12. Is it easier to fly alone or with a large flock?
13. Flying near the back of a large flock is like riding your bike ___.
   - with the wind
   - against the wind

14. During winter at the North Pole, how much does the sun shine?
   - never
   - all the time

15. During summer at the North Pole, how much does the sun shine?
   - never
   - all the time

Write the name of each animal in the picture.

16. 

17. 

18. 

19. 

20. 

21. 

22. Which animal in the picture is the biggest?

23. Which animal is the smallest?
Name ________________________

A  Story Items

1. What color was the water where it was shallow? __________________________

2. What color was the water where it was deepest? __________________________

3. Edna had blisters on her hands from ________________________________

4. As the girls sat in the lifeboat, they could see a billowing cloud in the
distance. What was making that cloud? ________________________________

5. Name 2 kinds of supplies you’d need to stay on the ocean for a long time.

6. In which direction were the girls drifting? _________________________________

7. Edna was thirsty. Why didn’t she drink some ocean water?
   - It was warm.  - It was salty  - It was dirty.

8. What made the boat move faster and faster? _______________________________

9. While the lifeboat was in the whirlpool, why did the clouds seem to be
   spinning?
   - because of the wind  - because the boat was spinning
   - because she was sick

10. Did the girls know how they got out of the whirlpool? ______________________

11. The water in the bottom of the boat was very warm, so that water had been
    in the boat for ____________________.
    - a few seconds  - a few minutes  - a long time

12. After Edna woke up, she saw fish. What color was the water? ________________

13. Why was Edna thinking about chewing on raw fish?
   - because she needed toothpaste
   - because she needed food
   - because she needed water
Review Items

14. Draw arrows at X, at Y and at Z to show the way the melted rock moves.

GO TO PART D IN YOUR TEXTBOOK.
Edna realized that she and Carla needed water. Without it, they would not last for more than a few more hours. Edna moved to the front of the boat and started to look for fishing gear. But then she noticed a slim line of smoke in the distance. It wasn’t the billowing smoke that came from the island. “A ship,” Edna said as she stood up. “I think there’s a ship over there.” She pointed.

Carla stood up. “You’re right. I can see it, and I think it’s coming in this direction.”

The next hour seemed longer than any hour Edna ever remembered. Edna didn’t do anything but watch the approaching ship. She felt that if she stopped watching it, it would disappear. As it got closer, she recognized the ship. “That’s Dad’s ship,” she shouted. “They’re coming back for us.”

The crew members helped Edna and Carla onto the deck of the ship. Captain Parker put his arms around the girls. Then Edna started to cry.
She didn't want to cry. During the whole adventure, she hadn't cried. But now, as her dad hugged her, she couldn't help it. Tears started to run down her cheeks. "Dad," she said. She was so glad to be back, and she was ashamed for not paying attention to what her father had said.

"I'm glad we found you," Captain Parker said. "Now let's get you taken care of."

Both girls had blisters on their hands from rowing. They were both badly sunburned. And they were very hungry and thirsty. But within an hour, they were fixed up. Now the girls had burn cream on their noses. They had little bandages on their hands. And they had full stomachs. Edna drank three glasses of juice. She ate two sandwiches. And she almost finished a huge piece of pie. But she couldn't make it through that pie. She pushed herself away from the table and stood up. "I'm full," she said.

"I'd like to talk with you girls," Captain Parker said. The girls followed him to the map room. Captain Parker told them to sit down. "All right," he said. "What happened?"

"I know we shouldn't have been playing around with the lifeboat," Carla said. "But I'm the one to blame. Edna didn't want to do it. It was my idea."

"Just tell me what happened," Captain Parker said. So the girls told the whole story: how the boat fell into the water, how they got sucked into the whirlpool, how they found the mysterious island, and what happened on the island. After the girls had finished telling about the second whirlpool, Carla said, "I don't know how we got out of the whirlpool, but we did, somehow. Then the next thing we knew, your ship was coming back toward us."

"That's some story," Captain Parker said. "Do you honestly think all those things happened?"

"Oh yeah," Edna said. "We're not making it up. It really happened, the whole thing."

Then Carla said, "Don't you believe us?"

Captain Parker smiled. "From the way you tell the story, I think you believe it. But I'm not sure it really happened that way."

"It did happen, Dad," Edna said. "It really did. Everything we told you is true."

"Well then, tell me this," Captain Parker said. "What day of the week was it when you went overboard?"

"Monday," Edna said. "And you spent a night on the island. Is that correct?"

"Yes," Edna agreed. Captain Parker said, "So what day would that make today?"

"Today is Tuesday," Edna said.
Captain Parker opened a door and said to a crew member, "Tell these girls what day today is."

The man looked a little puzzled. "Monday," he said.

"Monday?" Edna said. "No, that was yesterday. Today is Tuesday."

The young crew member smiled and said, "What is this, some kind of joke?"

Captain Parker said, "No, everything is all right. Thank you."

Carla said to Edna, "It can't be Monday."

"But it is Monday," Captain Parker said. "You may have had too much sun out there. But it has only been five hours since you left the ship."

"But it really happened, Dad," Edna said.

Later that afternoon, Edna was taking her wet clothes to the laundry room. As she approached the laundry room, she checked the pockets of her pants. She turned one pocket inside out and suddenly she stopped. About a handful of wet red sand fell onto the deck of the ship. If the adventure hadn't happened, how did that sand get into her pocket? Edna never found the answer to that question.
Skill Items

Here are three events that happened in the story. Write beginning, middle or end for each event.

1. In the distance was a slim line of smoke.
2. Captain Parker opened a door and talked to one of the crew members.
3. Later that afternoon, Edna was taking her wet clothes to the laundry room.

She automatically arranged the flowers.

4. What word means without thinking?
5. What word means that she put things where she wanted them?

Review Items

6. Captain Parker’s ship passed through a place where hundreds of ships have sunk or been lost. Name that place.

7. Two things happen to melted rock when it moves down the sides of a volcano. Name those 2 things.

8. The picture shows marks left by an animal. Which arrow shows the direction the animal is moving?

9. Write the letter of the part that shows the mark left by the animal’s tail.

10. Write the letter of the part that shows a footprint.

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Lesson 35
11. The earth makes a circle around the sun one time every
12. How many days does it take the earth to make one full circle
    around the sun?

13. How many heat lines are hitting place R on the map?
14. How many heat lines are hitting place A?
15. How many heat lines are hitting place M?
16. Write the letter of the place that’s the hottest.
17. Write the letter of the place that’s the coldest.
18. Write the letter of the place that has the warmest winters.
19. Write the letter of the place that’s farthest from the equator.
20. Why is place M hotter than place R?

21. During winter at the North Pole, how much does the sun shine?
    - never  - all the time
22. During summer at the North Pole, how much does the sun shine?
    - never  - all the time
For today's lesson, you will do a project on dinosaurs. You will make a wall chart that shows some of the great dinosaurs. Dinosaurs lived during the Mesozoic. The Mesozoic was divided into three parts: The early Mesozoic, the middle Mesozoic and the late Mesozoic. Tyrannosaurus lived in the late Mesozoic.

Make your chart show three layers. In the bottom layer, show pictures of some dinosaurs that lived in the early Mesozoic. Try to find at least two dinosaurs from the early Mesozoic. Write facts about the dinosaurs that you show on your chart. Tell each dinosaur's name, what it ate and how big it was.

Do the same thing for the dinosaurs of the middle Mesozoic. Find at least four dinosaurs. One of them may be Apatosaurus, which was much, much bigger than Tyrannosaurus or Triceratops. Put their pictures in the middle layer of the chart. Write facts that tell their names, what they ate and how big they were.

Do the same thing for the dinosaurs of the late Mesozoic. Find facts and pictures for at least four dinosaurs.
Name ____________________________

**Story Items**

1. What did Edna see that told her a ship was in the distance? __________________

2. How did she know it wasn’t from the island?
   - It billowed.
   - It didn’t billow.
   - It was black.

3. Whose ship was it? ____________________________

4. Why did Edna feel ashamed when she saw her father? ____________________________

5. The girls needed some care when they got back on the ship. Name 3 things they needed. __________________________________________

6. Did Captain Parker believe the girls’ story? ____________________________

7. On what day of the week did the girls go overboard? __________________________

8. On what day of the week did the girls think it was when they got back on the ship? __________________________

9. What day was it really when they got back on the ship? __________________________

10. What did Edna find to make her think the adventure really happened? __________________________

11. The sand in Edna’s pocket must have come from __________________________

**Review Items**

12. How long ago did dinosaurs live on Earth? __________________________

13. What is it called when the earth shakes and cracks? __________________________
14. Write the missing seasons on the picture below.

15. Shade half of earth A and half of earth C.

A. winter

B

C

D
Inventing

You live in a world that is filled with things that are made by humans. In this world are cars and airplanes and telephones and books. There are chairs and tables and stoves and dishes. There are thousands of things that you use every day.

Each of these things was invented. That means that somebody made the object for the first time. The person who made the first automobile invented the automobile. The person who made the first television invented the television. Remember, when somebody makes an object for the first time, the person invents that object. The object the person makes is called the invention. The first airplane was an invention. The first telephone was an invention.

Everything that is made by humans was invented by somebody. At one time, there were no cars, light bulbs or glass windows. People didn’t know how to make these
things, because nobody had invented them yet.

Most of the things that you use every day were invented after the year 1800. Here are just some of the things that people did not have before 1800: trains, trucks, cars, airplanes, bicycles, telephones, radios, televisions, movies, tape recorders, computers, electric appliances like washing machines, toasters, refrigerators or dishwashers.

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**Grandmother Esther**

The year was 1980. Leonard was 12 years old. He was at the museum with his grandmother. Going places with Grandmother Esther was fun, but it was also embarrassing. It was embarrassing because Grandmother Esther had a lot to say, and she talked in a very loud voice. She talked the loudest and the longest about inventing. So when Leonard went to the museum with Grandmother Esther, he was ready to hear a lot of loud talk about inventing.

In the museum, they spent a little time looking at the displays of wild animals and the dinosaurs. Leonard wanted to spend more time here, but Grandmother Esther kept hurrying Leonard along. She would say, “Let’s keep moving or we won’t see all the things we want to look at in the other parts of the museum.”

Leonard knew what parts of the museum his grandmother was talking about—the displays of the first automobiles, the first airplanes, the first computers and other things, such as the first radios.

So Grandmother Esther swept Leonard through the display of Egypt 4 thousand years ago. She darted through the exhibit of the cave people and through the display of horses. She slowed her pace as the two approached the display of the first airplanes.

As they walked through the large doorway of the exhibit hall, she announced, “Here is where we see the work of the most important people in the world—the inventors.”

Leonard listened to his grandmother’s speech about inventors. He nodded and very quietly said, “Yes.” He was hoping that she might talk more softly if he talked softly, so he spoke in a voice that was almost a whisper. But it didn’t work. Grandmother Esther’s voice echoed across the large display hall.

---

180  Lesson 36
"Without inventors there would be nothing," she said. Other people were starting to look at her and Leonard. Leonard could feel his ears getting hot from embarrassment.

"Where would we be today without inventors?" she asked herself loudly. Then she answered her own question: "We would have no planes because nobody would invent them. We would have no electric lights, no radios. We would not be able to build buildings like this one. We would still be living in caves!"

Grandmother Esther said the word caves so loudly that a guard at the other end of the exhibit hall turned around and stared at her. She marched to the display of the first airplane and pointed to it. "This was a great invention," she announced. "The two men who invented it knew that a machine could fly through the air. But other people didn't believe them. They said the inventors were crazy for working on a flying machine. But the inventors didn't give up. They invented a machine that actually flew. Once others saw
that it was possible for machines to fly, they began inventing better flying machines. They invented faster machines and bigger machines. Look at them!” She waved her arm in the direction of the other airplanes on display. Nearly everyone in the hall looked at the rows of planes.

Grandmother Esther marched down the center aisle of the display. In a great voice, she said, “But none of these later planes would be possible without the first one. And the first one would not have been possible without the inventors—those brave men who didn’t listen to other people but who knew that we don’t have to stand with our feet stuck in the mud. We can fly with the birds!”

The sound of her voice echoed through the hall. Then, one of the people who had been listening to her began to clap. Then others clapped. Soon there was a loud sound of clapping. Even the guard was clapping. Leonard was very embarrassed, but he didn’t want to be the only one not clapping. So he clapped, too. He said to himself, “My grandmother is a real character.”

Number your paper from 1 through 18.

Skill Items

Write the word from the box that means the same thing as the underlined part of each sentence.

| adventure | enormous | however | hardened |
| approach | displayed | mysterious | glanced |

1. The ice cream became hard in the freezer.
2. He went to school, but he was sick.
3. She looked quickly at the sign.

Use the words in the box to write complete sentences.

| actually | exhibit | directed | automatically |
| character | displayed | divided | arranged |

4. The new mysterious fish.
5. She the flowers.
Review Items

6. Which letter shows the place that has the warmest winters?
7. Which letter shows the place that is closest to the equator?
8. Which letter shows the place that is closest to a pole?
9. Is the North Pole or the South Pole closer to that letter?

10. Write the letter of the earth that has the North Pole tilting away from the sun.
11. Write the letter of the earth that has the North Pole tilting toward the sun.
12. Write the letter of the earth that has darkness all around the North Pole.
13. Write the letter of the earth that has daylight all around the North Pole.
14. Write A, B, C, and D. Then write the season each earth in the picture shows.
15. Two things happen to melted rock when it moves down the sides of a volcano. Name those 2 things.

16. What is it called when the earth shakes and cracks?

17. Most of the things that we use everyday were invented after the year [blank].
   • 1900
   • 2000
   • 1800

18. Write the letters of the 5 things that were not invented by anybody.
   
   a. horses
   b. buildings
   c. flowers
   d. snakes
   e. shoes
   f. bushes
   g. doors
   h. cows
   i. wagons
   j. hats
Name

A

1. Name 3 things that are made by humans. ____________________________________________

2. What is a person doing when the person makes an object for the first time? ____________________________________________

3. The person who makes an object for the first time is called an ____________________________________________

4. The object the person makes is called an ____________________________________________

5. Most of the things that we use every day were invented after the year _______.
   - 1800    - 1900    - 2200

6. Underline the 5 things that were not invented by anybody.
   - chairs    - horses    - flowers    - grass    - planes
   - bottles    - snakes    - spiders    - rugs

B

Story Items

7. Underline 2 reasons it was embarrassing to go places with Grandmother Esther.
   - She walked fast.    - She talked a lot.
   - She chewed gum.    - She mumbled to herself.
   - She talked loudly.

8. What did Grandmother Esther like to talk about? ____________________________________________

9. Did she look at the displays of dinosaurs for a long time? __________________________

10. Underline 3 displays that Grandmother Esther wanted to see.
    - radios    - cave people    - clothing
    - airplanes    - horses    - automobiles
11. Grandmother Esther made a speech in the exhibit hall about the people who invented the airplane. How did Leonard feel?

12. What did the other people in the exhibit hall do after the speech?

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**Review Items**

13. Write the missing seasons on the picture below.
14. Shade half of earth A and half of earth C.

![Diagram of the Earth's Seasons]

**GO TO PART D IN YOUR TEXTBOOK.**

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Grandmother Esther's Inventions

Leonard and his grandmother had been in the museum all morning. Now they were sitting outdoors, on the wide stairway that led from the museum. Grandmother Esther was pulling things from her lunch bag and setting them on the stair. And she was still talking. Leonard thought that she would never stop.

“Yes,” she said, “I was an inventor myself.” Leonard had heard this story many times. He could say the whole thing as well as she could.

“Yes,” she repeated. “But things were different back then. Nobody wanted to listen to a woman inventor. Everybody used to think that inventors were a crazy bunch anyhow. But they thought that a woman inventor had to be even crazier than the other inventors. So nobody listened to me. And so some great inventions were never made.”

She took a bite from a hard-boiled egg. Leonard thought she might stop talking while she ate, but she talked with her mouth full.

“Yes,” she said. “I actually invented the first water bed years before anybody else did. But you couldn’t get good material back then. So it
leaked a little bit, and everybody said it was a crazy idea."

She continued, "I also invented the folding bicycle. You could fold it up and carry it with you. Just because there were a few little problems with it, people thought it was crazy. But I could have fixed those problems. With just a little more work, I could have made a bike that wouldn't fold up when you were riding it."

Leonard wanted to invent things, too. But what could he invent? Almost without thinking, he said, "Well, the trouble with being an inventor is that everything has already been invented."

Grandmother Esther started to cough. While she was still coughing, she said, "Leonard, what kind of talk is that?" She pointed to the large hall behind her. "Think of how the world looked to people a hundred years ago. They said, 'We've got horse carts and buildings. We have railroads and ships. We must have everything. There is nothing more to invent.' But a few sharp-minded people could see that people didn't have everything."

Leonard realized that she was right. The people who lived in caves thought that everything had been invented. They didn't know about radios and automobiles and planes and television."
Grandmother Esther was still talking as she ate her sandwich. "The inventor sees things that are not there yet. The inventor thinks about how things could be. Everybody else just sees things as they are now."

Leonard nodded his head. For a moment he thought about what she said. Then he asked, "But how do you think about things that haven't been invented? What do you do, just think of make-believe things?"

She coughed and then she shouted, "Make-believe? Inventors don't deal in make-believe. They deal in what people need. That's where the invention starts. The inventor looks around and notices that people have trouble doing some things. The inventor sees a need that people have." Grandmother Esther stuffed the rest of her sandwich in her mouth. In an instant, she continued talking. "After the inventor sees a need, the inventor figures out how to meet that need."

"I don't understand," Leonard said.

She pointed back toward the exhibit hall and said, "The two men who invented the airplane saw a need. They saw that people could get places faster if they could fly in a straight line rather than going around on roads. They said to themselves, 'Let's make something that will let people go places faster.' So they invented a flying machine."

She continued, "The person who invented the car saw a need. That person saw that horses were a lot of work. People spent a lot of time feeding them and taking care of them. With a car, people would save a lot of time. With a car they could also go faster from place to place."

She pointed her finger at Leonard. "Remember, if you want to be an inventor, start with a need. Then figure out how to meet that need."

---

C Number your paper from 1 through 21.

Review Items
1. Write the letters of the 3 things you find in the Bermuda Triangle.
   a. huge waves
   b. mountains
   c. streams
   d. whirlpools
   e. ice floes
   f. sudden storms
2. The picture shows half a hailstone. How many times did the stone go through a cloud?

3. What is a person doing when the person makes an object for the first time?

4. The person who makes an object for the first time is called an [ ]

5. The object the person makes is called an [ ].

6. Write the letters of the 2 kinds of places that are safe for geese.
   a. places with a few ducks
   b. places with no geese or ducks
   c. places with a few geese
   d. places with many geese

7. Write the letter of the layer that went into the pile first.

8. Write the letter of the layer that went into the pile next.

9. Write the letter of the layer that went into the pile last.

10. Which layer went into the pile earlier, B or C?

11. Which layer went into the pile earlier, D or C?

12. Write the letter of the layer where we would find the skeletons of humans.

13. Write the letter of the layer that has dinosaur skeletons.

14. Write the letter of the layer where we would find the skeletons of horses.
15. When days get longer, is the North Pole tilting toward the sun or away from the sun?
16. When days get shorter, is the North Pole tilting toward the sun or away from the sun?
17. In April, the sun shines for more than ___ hours each day in Alaska.

18. Which globe shows how the earth looks on the first day of winter?
19. Which globe shows how the earth looks on the first day of summer?

20. How long ago did dinosaurs live on the earth?
   - a hundred years ago
   - a hundred million years ago
   - a million years ago

Study Item
21. Today's story mentions the two men who invented the first airplane. Look in a book on airplanes, in an encyclopedia or on a computer and see if you can find out the names of these two men.
A Story Items

1. What was wrong with the waterbed that Grandmother Esther invented?

2. What did Grandmother Esther’s folding bike sometimes do when a person was riding it?

3. **Underline** 2 things that Grandmother Esther ate for lunch.
   - apple
   - egg
   - cake
   - cookie
   - donut
   - sandwich

4. Did Leonard know what he wanted to invent?

5. At first Leonard thought that he couldn’t be an inventor because

6. Did Grandmother Esther agree?

7. The men who invented the first airplane saw a need. What need?

8. There was a need for the first automobile because people had problems with horses. **Underline** 2 problems.
   - Horses need care.
   - Horses are strong.
   - Horses are slow.
   - Horses like to run.

9. The first thing you do when you think like an inventor is find a ____________.

10. What’s the next thing you do?
    - Ask questions.
    - Meet the need.
    - Go to a museum.
Review Items

11. Draw arrows at J, at K and at L to show the way the melted rock moves.

12. What is a person doing when the person makes an object for the first time?

13. The person who makes an object for the first time is called an

14. The object the person makes is called an
Trying to Discover Needs

Leonard tried to think like an inventor, but the job was a lot harder than Leonard thought it would be. At first, Leonard had a lot of trouble trying to figure out things that people might need. He tried to remember what Grandmother Esther had said. “Start with a need,” she had said. “Then figure out how to meet that need.” But figuring out what people need was a big problem.

Leonard started out by asking people, “What do you need?” First, he asked his father. “Say, Dad, I’m thinking of inventing some things. What do you need?”

His dad was reading a paper. He looked up at Leonard and smiled.

“Well,” his dad said as he put the paper down. “Well,” he repeated. “Let me see.” He looked up at the ceiling. “Let me see.” Leonard’s dad chuckled. “I could use more money. Maybe you can invent a tree that grows money.”

Leonard smiled. Then he waited. His dad said, “It would be nice to have less traffic on the road. Maybe you could invent a way to take traffic off the road.”

Leonard didn’t even smile over his dad’s last idea. “Come on, Dad,” he said. “I’m not kidding around. I need some ideas about things I might be able to invent. But I have to start with a need.”

“Well, let me see,” his father said, and looked down at the paper again. “There are probably a lot of things that people need. I just can’t think of one right now.”

“Okay,” Leonard said. “Thanks anyhow.” To himself, he was saying, “My dad just doesn’t have the mind of an inventor.”
Next, Leonard talked to his mother. "Mom," he said, "I need ideas for inventions." He explained his problem to her. She was working at her desk.

"Oh, dear," she said. "Every time I go somewhere I can think of a million things that would make good inventions. Let me see..." She rubbed her chin and looked off into space.

"Let me see," she repeated. "Oh, yes," she said after a few moments. "I would like to have something that automatically made up the grocery list. You know, when the refrigerator gets low on milk, the word milk automatically goes on the list. Or when we run out of peanut butter, peanut butter goes on the list."

"Yeah," Leonard said. "That sounds pretty good. But how would that work?"

His mother looked at him with a puzzled expression. "Leonard," she said, "I'm not the inventor. You asked if I knew of something that should be invented. You didn't ask me how to invent it. If you want to know how to invent it, go ask your grandmother."

So Leonard asked his grandmother. He first explained his mother's idea. Then he said, "But I don't know how to invent that kind of list."

Grandmother Esther was reading a car magazine. She looked up over her glasses and shook her head no. She said, "Your mother has had that crazy idea about the list for twenty years. She must have tried to get me to invent that list fifty times. And I must have told her five thousand times that I don't know how to invent a list that automatically"
writes down things when you get low on them. But every time I turn around, here she is again, talking about that same invention. I think your mother's problem is that she hates to go grocery shopping and she doesn't like to make up grocery lists. Now I'm not saying that it's impossible to invent something that would make up lists. I'm just saying that you're looking at one inventor who doesn't know how to do it."

"Okay," Leonard said. "Thanks anyhow." As he left the room, Grandmother Esther was looking at her magazine, talking to herself. She was saying, "Again and again and again I kept telling her, I don't know how to do it. But she kept coming back with the same idea, that silly list writer."

During the week that followed, Leonard talked to nearly everybody about things they thought should be invented. At the end of the week, he didn't have any good ideas for inventions. But he had discovered something. People just don't seem to be very good at telling about things that they need. Leonard said to himself, "Maybe the hardest part of being an inventor is finding something to invent."

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Number your paper from 1 through 24.

Skill Items

They were impressed by her large vocabulary.

1. What word means they thought her vocabulary was very good?
2. What word refers to all the words a person knows?

Review Items

3. The men who invented the first airplane saw a need. What need?
4. Write the letter of the footprint made by the heaviest animal.
5. Write the letter of the footprint made by the lightest animal.

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Lesson 38
The picture shows marks left by an animal.
6. Which arrow shows the direction the animal is moving?
7. Write the letter of the part that shows a footprint.
8. Write the letter of the part that shows the mark left by the animal’s tail.

9. Geese live in large groups called ___.
10. Where are most wild geese born?
11. In which direction do geese fly in the fall?
12. What is this trip called?

13. The ___s are the coldest places on the earth, and the ___ is the hottest place on the earth.

14. Which letter shows the part of the earth that receives more heat from the sun than any other part?
15. Which letter shows a part of the earth that receives less heat from the sun than any other part?

16. If you can see the sun, is it daytime or nighttime on your side of the earth?
17. What is it on the other side of the earth?
18. The earth turns around one time every ___ hours.
19. Write the letter of the earth that shows the person in daytime.
20. Write the letter of the earth that shows the person 6 hours later.
21. Write the letter that shows the person another 6 hours later.
22. Write the letter that shows the person another 6 hours later.

23. Write the letters of the 2 kinds of places that are safe for geese.
   a. places with many geese
   b. places with a few geese
   c. places with a few ducks
   d. places with no geese or ducks

**Study Item**

24. The two-wheeled bicycle is not very old. It was probably hard for somebody to get the idea of a two-wheeled bicycle because it seemed impossible for somebody to move along on two wheels without falling over. Find out when James Starley invented his two-wheeled Ariel bicycle.
Name ____________________________

A  Story Items

1. What was wrong with the waterbed that Grandmother Esther invented?

2. At first Leonard thought that he couldn’t be an inventor because

3. The first thing you do when you think like an inventor is find a

4. What’s the next thing you do?
   • Ask questions.
   • Meet the need.
   • Go to a museum.

5. Leonard’s father had two ideas for inventions. One was something that cut down on traffic. What was his other idea?

6. Did Leonard’s father think like an inventor? ____________________________

7. Leonard’s mother had an idea for an invention. What was it?

8. Had Grandmother Esther heard that idea before? ____________________________

9. Did Grandmother Esther like that idea? ____________________________

10. Did Leonard get any good ideas for inventions by talking to people?

11. What did Leonard think the hardest part of being an inventor was?
Review Items

12. How many Great Lakes are there?  

13. Color the Great Lakes on the map.

14. The picture below shows the sun and two balls. Fix up the balls so that half of each ball is in sunlight and half is in shadow.

GO TO PART C IN YOUR TEXTBOOK.