

THINKING OPERATIONS

EXERCISE 1

STATEMENT INFERENCE

The first Thinking Operation today is Statement Inference.

1. Listen. Pollution in the air increases every year. Say that statement. (Signal.) *Pollution in the air increases every year.* (Repeat until firm.)

Individual test

(Call on individual students to say the statement.)

2. Everybody, listen. Pollution in the air increases every year. When does pollution increase in the air? (Signal.) *Every year.*
 - What increases in the air every year? (Signal.) *Pollution.*
 - Where does pollution increase every year? (Signal.) *In the air.*
 - How does pollution in the air increase every year? (Signal.) *I don't know.*
 - What does pollution in the air do every year? (Signal.) *Increases.*
 - Does the pollution in the air get greater every year? (Signal.) *Yes.*
 - (Repeat step 2 until firm.)

Individual test

(Call on individual students to answer a question from step 2.)

EXERCISE 2

DEDUCTIONS: With *no*

The next Thinking Operation is Deductions.

1. Listen to this rule. No amphibians are warm-blooded. Say the rule. (Signal.) *No amphibians are warm-blooded.*
2. Henrietta had a scary dream. What does the rule let you know about Henrietta? (Signal.) *Nothing.*

3. Listen. No amphibians are warm-blooded. A salamander is an amphibian. What does the rule let you know about a salamander? (Signal.) *A salamander isn't warm-blooded.*
 - How do you know that a salamander isn't warm-blooded? (Signal.) *Because no amphibians are warm-blooded.*
4. Listen. No amphibians are warm-blooded. A frog is an amphibian. What does the rule let you know about a frog? (Signal.) *A frog isn't warm-blooded.*
 - How do you know that a frog isn't warm-blooded? (Signal.) *Because no amphibians are warm-blooded.*
5. Listen. No amphibians are warm-blooded. Bill looked for a tiger. What does the rule let you know about Bill? (Signal.) *Nothing.*
6. (Repeat steps 2–5 until firm.)

EXERCISE 3

DEDUCTIONS

1. Get ready to make a deduction.
2. Listen. Some planets have many moons. Saturn is a planet. So (pause; signal), maybe Saturn has many moons. (Repeat until firm.)
3. My turn to say the whole deduction. Some planets have many moons. Saturn is a planet. So, maybe Saturn has many moons.
4. Your turn. Say the whole deduction. (Signal.) *Some planets have many moons. Saturn is a planet. So, maybe Saturn has many moons.* (Repeat until firm.)

Individual test

(Call on individual students to say the whole deduction.)

EXERCISE 4

DEFINITIONS

The next Thinking Operation is Definitions.

1. **Construct** means to make or to build.
What word means to make or to build?
(Signal.) *Construct.*
2. **Listen.** He will build his house on a hill.
Say that. (Signal.) *He will build his house on a hill.* (Repeat until firm.)
 - Now you're going to say that sentence with a different word for **build**. (Pause.) **Get ready.** (Signal.) *He will construct his house on a hill.* (Repeat until firm.)
 - (Repeat step 2 until firm.)
3. **Listen.** That building is made of concrete.
Say that. (Signal.) *That building is made of concrete.* (Repeat until firm.)
 - Now you're going to say that sentence with a different word for **made**. (Pause.) **Get ready.** (Signal.) *That building is constructed of concrete.* (Repeat until firm.)
 - (Repeat step 3 until firm.)
4. **Listen.** She will build her own furniture.
Say that. (Signal.) *She will build her own furniture.* (Repeat until firm.)
 - Now you're going to say that with a different word for **build**. (Pause.) **Get ready.** (Signal.) *She will construct her own furniture.* (Repeat until firm.)
 - (Repeat step 4 until firm.)

EXERCISE 5

DEFINITIONS

1. **Majority.** (Pause.) What does majority mean? (Signal.) *More than half.*
 - What word means more than half? (Signal.) *Majority.*
 - (Repeat step 1 until firm.)
2. **Listen.** The majority of the class voted for Joyce. **Say that.** (Signal.) *The majority of the class voted for Joyce.* (Repeat until firm.)
 - Now you're going to say that sentence with different words for **majority**. (Pause.) **Get ready.** (Signal.) *More than half of the class voted for Joyce.* (Repeat until firm.)
 - (Repeat step 2 until firm.)

3. **Inquire.** (Pause.) What's a synonym for inquire? (Signal.) *Ask.*
 - And what's a synonym for ask? (Signal.) *Inquire.*
 - (Repeat step 3 until firm.)
4. **Listen.** "Where is the meeting?" he asked. **Say that.** (Signal.) *"Where is the meeting?" he asked.* (Repeat until firm.)
 - Now you're going to say that sentence with a synonym for asked. (Pause.) **Get ready.** (Signal.) *"Where is the meeting?" he inquired.* (Repeat until firm.)
 - (Repeat step 4 until firm.)
5. **Consume.** (Pause.) What does consume mean? (Signal.) *Use up.*
 - What word means use up? (Signal.) *Consume.*
 - (Repeat step 5 until firm.)
6. **Listen.** Every bath uses up thirty gallons of water. **Say that.** (Signal.) *Every bath uses up thirty gallons of water.* (Repeat until firm.)
 - Now you're going to say that sentence using a different word for **uses up**. (Pause.) **Get ready.** (Signal.) *Every bath consumes thirty gallons of water.* (Repeat until firm.)
 - (Repeat step 6 until firm.)

EXERCISE 6

BASIC EVIDENCE: Using Facts

The next Thinking Operation is Basic Evidence.

1. You're going to use two facts to explain things that happen. (Hold up one finger.) **First fact.** It takes many years to become a doctor. **Say it.** (Signal.) *It takes many years to become a doctor.* (Repeat until firm.)
 - (Hold up two fingers.) **Second fact.** Doctors work in hospitals. **Say it.** (Signal.) *Doctors work in hospitals.* (Repeat until firm.)

2. **Everybody, say those facts again.** (Hold up one finger.) **First fact.** *It takes many years to become a doctor.*
 - (Hold up two fingers.) **Second fact.** *Doctors work in hospitals.*
 - (Repeat until the students say the facts in order.)

Individual test

(Call on individual students to say the facts.)

3. **Here's what happens:** They have to read hundreds of books. You're going to tell me the fact that explains **why** that happens. (Pause.) **Get ready.** (Signal.) *It takes many years to become a doctor.*
4. **Listen. First fact.** *It takes many years to become a doctor.* **Second fact.** *Doctors work in hospitals.*
5. **Here's what happens:** There are no eighteen-year-old doctors. You're going to tell me the fact that explains **why** that happens. (Pause.) **Get ready.** (Signal.) *It takes many years to become a doctor.*
6. **Here's what happens:** There are many nurses where doctors work. You're going to tell me the fact that explains **why** that happens: (Pause.) **Get ready.** (Signal.) *Doctors work in hospitals.*
7. **Here's what happens:** Doctors hear ambulances every day. You're going to tell me the fact that explains **why** that happens. (Pause.) **Get ready.** (Signal.) *Doctors work in hospitals.*
8. (Repeat steps 5–7 until firm.)

EXERCISE 7

SAME: Review

The next Thinking Operation is Same.

1. **I'll name some things.** When I call on you, name ways those things are the same.
2. **A cow and a horse.** Name eight ways **they are the same.** (Call on one student. Praise the student if he or she names eight ways.)

3. **A television and a radio.** Name eight ways **they are the same.** (Call on one student. Praise the student if he or she names eight ways.)
4. **Skating and dancing.** Name four ways **they are the same.** (Call on one student. Praise the student if he or she names four ways.)
5. **A snake and a lizard.** Name eight ways **they are the same.** (Call on one student. Praise the student if he or she names eight ways.)

EXERCISE 8

NEW OPPOSITES

The next Thinking Operation is Opposites.

1. (Draw a straight line on the board. Draw a jagged line below it. Point to the straight line.) **This is straight.**
 - (Point to the crooked line.) **This is crooked.**
2. **What's the opposite of crooked?** (Signal.) *Straight.*
 - **What's the opposite of straight?** (Signal.) *Crooked.*
 - (Repeat step 2 until firm.)

EXERCISE 9

OPPOSITES

1. **Straight.** (Pause.) **What's the opposite of straight?** (Signal.) *Crooked.*
 - **Crooked.** (Pause.) **What's the opposite of crooked?** (Signal.) *Straight.*
 - (Repeat step 1 until firm.)
2. **Fuller.** (Pause.) **What's the opposite of fuller?** (Signal.) *Emptier.*
 - **Having a noisy party.** (Pause.) **What's the opposite of having a noisy party?** (Signal.) *Having a quiet party.*
 - (Repeat step 2 until firm.)
3. **Dead.** (Pause.) **What's the opposite of dead?** (Signal.) *Alive.*
 - **Hardest.** (Pause.) **What's the opposite of hardest?** (Signal.) *Softest.*
 - (Repeat step 3 until firm.)
4. **Straight.** (Pause.) **What's the opposite of straight?** (Signal.) *Crooked.*
5. (Repeat steps 2–4 until firm.)

Individual test

(Call on individual students to do part of step 1, 2, or 3.)

EXERCISE 10

OPPOSITES

1. You're going to say sentences with **opposites**.
2. Listen. Summer is usually the driest season. Say that. (Signal.) *Summer is usually the driest season.* (Repeat until firm.)
 - Now you're going to say that sentence with the opposite of **driest**. (Pause.) **Get ready.** (Signal.) *Summer is usually the wettest season.* (Repeat until firm.)
 - (Repeat step 2 until firm.)
3. Listen. Oak bark is rougher than beech bark. Say that. (Signal.) *Oak bark is rougher than beech bark.* (Repeat until firm.)
 - Now you're going to say that sentence with the opposite of **rougher**. (Pause.) **Get ready.** (Signal.) *Oak bark is smoother than beech bark.* (Repeat until firm.)
 - (Repeat step 3 until firm.)
4. Listen. Stoplights make driving safe. Say that. (Signal.) *Stoplights make driving safe.* (Repeat until firm.)
 - Now you're going to say that sentence with the opposite of **safe**. (Pause.) **Get ready.** (Signal.) *Stoplights make driving dangerous.* (Repeat until firm.)
 - (Repeat step 4 until firm.)
5. Listen. Some people are sad when they lose money. Say that. (Signal.) *Some people are sad when they lose money.* (Repeat until firm.)
 - Now you're going to say that sentence with the opposite of **sad**. (Pause.) **Get ready.** (Signal.) *Some people are happy when they lose money.* (Repeat until firm.)
 - (Repeat step 5 until firm.)

6. Listen. Good fruit is hard to find in winter. Say that. (Signal.) *Good fruit is hard to find in winter.* (Repeat until firm.)
 - Now you're going to say that sentence with the opposite of **good**. (Pause.) **Get ready.** (Signal.) *Bad fruit is hard to find in winter.* (Repeat until firm.)
 - (Repeat step 6 until firm.)
7. Listen. Most rivers are crooked. Say that. (Signal.) *Most rivers are crooked.* (Repeat until firm.)
 - Now you're going to say that sentence with the opposite of **crooked**. (Pause.) **Get ready.** (Signal.) *Most rivers are straight.* (Repeat until firm.)
 - (Repeat step 7 until firm.)

EXERCISE 11

ANALOGIES: Synonyms

The next Thinking Operation is **Analogies**.

1. Here's an analogy about words: **Lazy is to indolent as complete is to ...** (Pause 2 seconds.) **Get ready.** (Signal.) *Finish.*
 - Everybody, say that analogy. (Signal.) *Lazy is to indolent as complete is to finish.* (Repeat until firm.)
2. **What are lazy and complete?** (Signal.) *Words.*

To correct students who say *Synonyms*:

 - a. **Lazy and complete are words.**
 - b. (Repeat step 2.)
- **Lazy is to indolent as complete is to finish.** That analogy tells something about those words. (Pause.) **What does that analogy tell about those words?** (Signal.) *What synonyms those words have.* (Repeat until firm.)
3. **Say the analogy.** (Signal.) *Lazy is to indolent as complete is to finish.* (Repeat until firm.)
4. **And what does that analogy tell about those words?** (Signal.) *What synonyms those words have.*
5. (Repeat steps 3 and 4 until firm.)

EXERCISE 12

ANALOGIES: Opposites

1. Here's an analogy about words: **Short is to long as fast is to ...** (Pause 2 seconds.) **Get ready.** (Signal.) *Slow.*
 - **Everybody, say the analogy.** (Signal.) *Short is to long as fast is to slow.* (Repeat until firm.)
2. **What are short and fast?** (Signal.) *Words.*
 - **Short is to long as fast is to slow.** That analogy tells something about those words. (Pause.) **What does that analogy tell about those words?** (Signal.) *What opposites those words have.* (Repeat until firm.)
3. **Say the analogy.** (Signal.) *Short is to long as fast is to slow.* (Repeat until firm.)
4. **And what does that analogy tell about those words?** (Signal.) *What opposites those words have.*
5. (Repeat steps 3 and 4 until firm.)

EXERCISE 13

ANALOGIES

Note: Praise all reasonable responses in steps 1, 3, and 4, but have the group repeat the responses specified in the exercise.

Task A

1. Here's an analogy: **A spoon is to metal as a toothbrush is to ...** (Pause 2 seconds.) **Get ready.** (Signal.) *Plastic.*
 - **Everybody, say that analogy.** (Signal.) *A spoon is to metal as a toothbrush is to plastic.* (Repeat until firm.)
2. **What class are a spoon and a toothbrush in?** (Signal.) *Tools.*
3. **A spoon is to metal as a toothbrush is to plastic.** The analogy tells something about those tools. (Pause.) **What does that analogy tell about those tools?** (Signal.) *What material those tools are made of.* (Repeat until firm.)
4. **Say the analogy.** (Signal.) *A spoon is to metal as a toothbrush is to plastic.* (Repeat until firm.)

Task B

1. Here's an analogy: **A ladder is to climbing as a shovel is to ...** (Pause 2 seconds.) **Get ready.** (Signal.) *Digging.*
 - **Everybody, say that analogy.** (Signal.) *A ladder is to climbing as a shovel is to digging.* (Repeat until firm.)
2. **What class are a ladder and a shovel in?** (Signal.) *Tools.*
3. **A ladder is to climbing as a shovel is to digging.** The analogy tells something about those tools. (Pause.) **What does that analogy tell about those tools?** (Signal.) *What you do with those tools.*
 - (Repeat step 3 until firm.)
4. **Say the analogy.** (Signal.) *A ladder is to climbing as a shovel is to digging.* (Repeat until firm.)

EXERCISE 14

INDUCTIONS

The next Thinking Operation is Inductions.

1. I'm going to tell you facts about the sun and the temperature on planets. See if you can figure out the rules.
2. **Listen.** On Mercury the sun is near and the planet is hot. On Saturn the sun is far and the planet is cold. On Venus the sun is near and the planet is hot. On Neptune the sun is far and the planet is cold. On Jupiter the sun is far and the planet is cold.
3. **You're going to tell me the rule about what happens when the sun is far.** (Pause.) **Get ready.** (Signal.) *When the sun is far, the planet is cold.*
4. **You're going to tell me the rule about what happens when the sun is near.** (Pause.) **Get ready.** (Signal.) *When the sun is near, the planet is hot.*
5. (Repeat steps 3 and 4 until firm.)

Individual test

(Call on individual students to do step 3 or step 4.)

Points

(Pass out the Workbooks. Award points for Thinking Operations.)

WORKBOOK EXERCISES

We're going to do Workbooks now.

EXERCISE 15

DEDUCTIONS

1. Everybody, touch part A in your Workbook. ✓
 - Read the sentences in the box with me. Get ready. (Signal.) *Here's the only thing Sue did. Sue wore some of the white shirts.*
 - What's the **only** thing Sue did? (Signal.) *Wore some of the white shirts.* (Repeat until firm.)
2. Everybody, read item 1 with me. Get ready. (Signal.) *Sue wore object A.*
 - Write the answer. ✓
3. Read item 2 with me. Get ready. (Signal.) *Sue did not wear object C.*
 - Write the answer. ✓
4. Read item 3 with me. Get ready. (Signal.) *Sue wore object D.*
 - Write the answer. ✓
5. Get ready to check your answers. Make an X next to any item that's wrong. I'll read the items. You say **true**, **false**, or **maybe**. Item 1. Sue wore object A. (Signal.) *Maybe.*
 - Item 2. Sue did not wear object C. (Signal.) *True.*
 - Item 3. Sue wore object D. (Signal.) *False.*

EXERCISE 16

SAME

1. Everybody, find part B in your Workbook. ✓
 - You're going to make a box around the answer at the end of each row.

2. Now, I'll read the words in each row. You make a box around the answer.
3. Row 1. **Motorcycle, ink, lamp.** Make a box around the answer. ✓
4. Row 2. **Hot, sticky, lumpy.** Make a box around the answer. ✓
5. Row 3. **Skates, water, picture.** Make a box around the answer. ✓
6. Row 4. **Mean, happy, quick.** Make a box around the answer. ✓
7. Row 5. **Envelope, flower, shell.** Make a box around the answer. ✓
8. Get ready to check your answers. Mark any item you miss with an X. I'll read the words in each row. You tell me if the words name objects or actions, or tell what kind.
9. Row 1. **Motorcycle, ink, lamp.** (Signal.) *Objects.*
10. (Repeat step 9 for rows 2–5.)

EXERCISE 17

ANALOGIES

1. Everybody, touch part C in your Workbook. ✓
 - I'll read the analogy. Don't say the answer. Christmas is to December as Independence Day is to blank.
2. The words you'll choose from are **June, January, and July**. Listen to the analogy again and get ready to copy the right word in the blank. Christmas is to December as Independence Day is to blank. Copy the right word in the blank. ✓
3. Listen. Christmas is to December as Independence Day is to blank. Everybody, what's the answer? (Signal.) *July.*
4. Everybody, say the whole analogy with me. (Signal.) *Christmas is to December as Independence Day is to July.* Put an X next to the analogy if you didn't copy the word **July**.
5. Listen. Christmas is to December as Independence Day is to July. That analogy tells something about those holidays. (Pause 4 seconds.) What does that analogy tell about those holidays? (Signal.) *What months those holidays are in.*

EXERCISE 18

DESCRIPTION

- Everybody, touch part D in your Workbook. ✓
- Figure out which object I describe.
- Item 1. This object is a living thing. This living thing is an animal. This animal is carnivorous. Listen again. (Repeat the description.)
- Write the letter for item 1. ✓
- Item 2. This object needs food. The object is found where it is hot. This is a herbivorous animal. Listen again. (Repeat the description.)
- Write the letter for item 2. ✓
- Item 3. This object is a living thing. This object is an animal. This animal lives where it is cold. Listen again. (Repeat the description.)
- Write the letter for item 3. ✓
- Let's check your answers. Mark any items you missed with an X.
- Item 1. This object is a living thing. This living thing is an animal. This animal is carnivorous. Everybody, what letter? (Signal.) B. And what does B stand for? (Signal.) A polar bear.
- (Repeat step 6 for items 2 and 3.)

Points

(Award points for Workbooks.)

INFORMATION

We're going to work on Information now.

EXERCISE 19

MEMORIZATION: Poem

Say that poem we learned about the mechanic and the astronomer. Get ready. (Signal.) A mechanic fixes cars; An astronomer looks at stars; A captain has two bars; And a boxer spars and spars. (Repeat until firm.)

Individual test

(Call on individual students to say the whole poem.)

Lesson 52

ERRORS

Workbook page 82

A Write true, false, or maybe.

Here's the only thing Sue did.
Sue wore some of the white shirts.

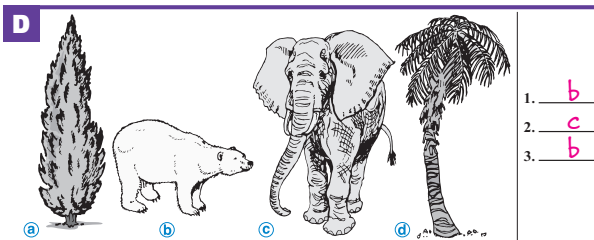


- Sue wore object A.
- Sue did not wear object C.
- Sue wore object D.

maybe
true
false

B	1. motorcycle, ink, lamp	objects	actions	tell what kind
	2. hot, sticky, lumpy	objects	actions	tell what kind
	3. skates, water, picture	objects	actions	tell what kind
	4. mean, happy, quick	objects	actions	tell what kind
	5. envelope, flower, shell	objects	actions	tell what kind

C Christmas is to December as Independence Day is to July.
June
January
July



- b
- c
- b

EXERCISE 20

MEMORIZATION: Poem

Say that poem we learned about the beautician and the tailor. Get ready. (Signal.)

A beautician fixes hair;
A tailor can mend a tear;
An exposition is a fair;
And one plus one is a pair.

Individual test

(Call on individual students to say the whole poem.)

Points

(Award points for Information. Direct the students to total their points for the lesson and enter the total on the Point Summary Chart.)

END OF LESSON 52