



## LESSON 3: Ideating

### LESSON OVERVIEW

This lesson will introduce students to the concepts of divergent thinking and brainstorming as methods to ideate. Students will learn and practice using tools for divergent thinking and idea forming. Students will continue to use the YIPLit theme book, the guidepost for their invention journey. After reading the book aloud, the students will use the tools to consider ways to solve a specific problem.

This lesson may be broken into two sessions depending on time available or you may pick and choose activities to fit into a single class period. This may also be used as a stand-alone lesson or extended to further incorporate Lessons 1, 2, 4, 5, 6, 7, 8.

### OBJECTIVE

Students will be able to:

- Describe and apply the brainstorming process.
- Combine techniques of creative and critical thinking to approach problems and consider possible solutions.
- Use divergent thinking through the lens of different characters in the story.
- Learn that WAYS OF thinking are different than TOOLS FOR thinking.

### MATERIALS

- Google Slides: YIPLit Lesson 3
- Paperclips to hand out to students (*will be collected after exercise*)
- Book: **Walrus in the Bathtub** by Deborah Underwood, illustrated by Matt Hunt; ISBN-10: 0803741014 OR...
- Read-aloud Video: <https://youtu.be/-dIJrpgFoVs> Reading time- 5:33
- SCAMPER Video: <https://youtu.be/-OMJINQIZzA> 6:55 (optional)
- SCAMPER Worksheet (must be printed, not included in YIPLit Inventor's Journal)
- Drinking straws (one per student, plus extra)
- Markers or crayons and paper for drawing and/or craft supplies (glue, scissors, tape, cardboard, construction paper, modeling clay, etc.) – to be used in SCAMPER Activity as an optional exercise
- 30 Circles Worksheet (optional – must be printed, not included in YIPLit Inventor's Journal)
- YIPLit Inventor's Journals
- Paper for SCAMPER the Ending activity (optional)
- Pencils, pens, crayons

### NOTES FOR THE TEACHER

Teacher may use slides provided or lead instruction and discussion on their own.

You may wish to establish guidelines to create a safe space where all students feel comfortable sharing ideas while brainstorming as a class. Suggested ground rules to create a positive environment include:

- Go For Quantity: Think out of the box. Go past the obvious ideas by generating as many ideas as possible
- Defer Judgement: All ideas are good ideas. No idea is silly or irrelevant.
- Build On Ideas- Encourage students to combine or improve ideas that may already be listed.
- Seek Wild Ideas- The most creative ideas are often dismissed, but should be considered. Novel and original ideas are valued.
- All In- All students should be involved in the brainstorming process.

You may wish to divide this lesson into 2 sessions depending on time constraints, or you may also choose omit some of the activities as needed to fit into a single class period.

### INSTRUCTION & ACTIVITIES

***Teacher may lead the following lesson plan with flexibility to adapt as needed to fit technology and class format:***

**Teacher Instruction:**

Ask students what it means to “BRAINSTORM”. Allow students to share ideas. Brainstorming requires quick thinking and creativity. Many ideas are produced, but value judgements are avoided in a brainstorming process. Think back to when you talked about the Invention Process. Remember the “IDEATE” step? “IDEATE” is just a fancy way of saying “BRAINSTORM” and this is an important step in the Invention Process.

**Activity: Paper Clip Redesign (10 minutes)**

*Divide students into pairs, small groups, or have them work individually in this activity.*

Hand out 3-5 paper clips to each student/group. After a brief discussion about the reason the inventor may have invented paper clips, why and for whom, the teacher asks this question: “What are all the ways a paper clip can be used?” (See Google Slides: YIPLit Lesson 3)

Ask students to draw or write ideas for 3-5 different ways a paper clip can be used. Allow time to work.

Have a class discussion where each student/group shares their ideas with the class. Try to go through as many of the group’s lists as possible as a way of illustrating that this is a DIVERGENT THINKING exercise where one should always:

Defer Judgment- “Did anyone hear or say ‘that won’t work’, ‘that’s a dumb idea’, etc.?” Those are examples of judgment and can shut down people from being creative.

Go For Quantity- “Did you notice that many of you had the same ideas? That happens often! The goal is to get past the obvious ones by generating as many ideas as possible!”

Build on Ideas- “This is sometimes called ‘piggybacking’- when one idea gets combined or changed from a previous idea. Also, sometimes ideas get better during brainstorming with the addition of a few details.”

Seek Wild Ideas- “Did you notice that how few ideas were left that no other student/team had in common?” These ideas had novelty and were original, and some were truly wild.

All In- “Did everyone share at least one idea, or contribute by combining or altering a previous idea?”

**Teacher Instruction:**

Introduce the SCAMPER approach to brainstorming. SCAMPER is one tool used to structure a brainstorming session and to encourage DIVERGENT THINKING. SCAMPER lists cues that spark ideas. Discuss these strategies to guide the class through a brainstorm together. Present the vocabulary (see Google Slides: YIPLit Lesson 3) and help students by prompting them with the questions and suggestions for each letter of SCAMPER. Use a common utensil, the drinking straw, as the launch point for your SCAMPER.

Ask the students about each of the verbs in SCAMPER:

“Can you tell me what **SUBSTITUTE** means?”

“Can you tell me what **COMBINE** means?”

“Can you tell me what **ADAPT** means?”

“Can you tell me what **MODIFY**, **MAGNIFY**, and **MINIMIZE** means?”

“Can you tell me what **PUT TO ANOTHER USE** means?”

“Can you tell me what **ELIMINATE** means?”

“Can you tell me what **REVERSE** and **REARRANGE** means?”

**Activity: Video (optional- 10 minutes):**

*NOTE: This activity is optional but may help students better understand how to apply the SCAMPER method of brainstorming.*

Tell students that you will watch the SCAMPER video together then SCAMPER something on their own! (show SCAMPER video: SCAMPER Video: <https://youtu.be/-OMJINQIZzA> 6:55, video included in Google Slides: YIPLit Lesson 3)

Following the video, ask the students what problem was the designer asked to solve before he decided to use SCAMPER? (*to come up with a new way to advertise peanut butter*) Can they provide specific examples of some of his ideas?

**Activity: SCAMPER (10 minutes):**

*Divide students into pairs or small groups for this activity.*

Show students a drinking straw. Ask them the following questions:

- What is this?
- What is it used for?
- What else could we use it for?
- What else could it be made of?
- How can we change it to make it something to be used to do something else?

*Distribute the SCAMPER Worksheet (this worksheet should be printed ahead and is not in the YIPLit Inventor’s Journal).*

Have students SCAMPER the straw. They will find different uses for the straw, or ways to change the straw to make it better or to repurpose it. Students should complete the SCAMPER Worksheet as they work together.

*NOTE: If time allows, or if you would like to make this activity more creative and hands-on, you may choose to ask students to draw their new use for or changes to the straw. Or you allow them to use various craft supplies to create a 3-dimensional model of their new version of the straw.*

Bring the class together to share their brainstorming ideas.

Lead a short reflection. What was fun about SCAMPERing? What was challenging? What can you do when you feel “stuck” in the brainstorm- when you can’t think of anything? How did SCAMPER help you think differently?

*NOTE: Teacher may choose to end Session 1 of YIPLit Lesson 3 here, or you may move on and select the activities you feel are most appropriate for your students and will fit into the time you have available.*



**Activity: 30 Circles (optional, 10 minutes):**

*NOTE: If you divided Lesson 3 into two sessions, this activity is a good Warm Up for starting Session 2 of YIPLit Lesson 3.*

*NOTE: The 30 Circles Worksheet is not included in the YIPLit Inventor’s Journal. If using, please print and distribute at start of activity.*

Begin Session 2 by asking this question: “In our last lesson we learned about the Guidelines for Divergent Thinking; who remembers what they are?”

“And we came up with interesting ways to improve a straw using a Divergent Thinking tool called SCAMPER. Can you tell me what some of the verbs were that we used?” (*these can be posted*)

*Distribute the 30 Circles Worksheet (this worksheet should be printed ahead and is not in the YIPLit Inventor’s Journal).*

Ask students to come up with AS MANY ideas as possible using these circles – give them 3 minutes!

After 3 minutes, ask the following questions using a “Stand Up” model (If students can answer “Yes” to the question, they should stand up. If they can answer “No”, they should remain sitting):

“How many people made smiley faces?”

“...other faces?”

“...the sun?”

“...a globe?”

“...balls?”

“...animals?”

“How many people added to the outside of a circle?”

“How many people combined circles?”

“What unusual thing did you make?”

“Did anyone add lots of details?”

Explain that this was another exercise to show different WAYS OF THINKING. These ways of thinking should be used whenever you’re looking for ideas as well as when you’re working on a solution or making a decision- when you are IDEATING (refer to this step of the Invention Process.)

**Read Aloud (12 minutes):**

Go back to the theme book, **Walrus in the Bathtub** by Deborah Underwood, illustrated by Matt Hunt. Before reading, explain that sometimes a story starts with a problem and ends with a solution.

Read aloud the book, **Walrus in the Bathtub**, and pause using Think Alouds throughout (“What would change if \_\_\_\_\_?”, “What problems would happen if Walrus was in the refrigerator (or other room/space)?”, etc.)

(If video book is used, teacher can incorporate Think Alouds by stopping video briefly for questions. A video read aloud of the book is in the Google Slides if you choose to share the video).

**Activity: Change the Ending (10 minutes):**

Divide students into pairs or small groups for this activity.

Tell the class that today they are going to change the ending of the story! This walrus MUST be removed from the bathtub- how might this happen?

Students are reminded/encouraged to remember the guidelines for Divergent Thinking:

Defer Judgment

Go For Quantity

Build on Ideas

Seek Wild Ideas

Let the students come up with a few ideas before adding SCAMPER verb prompts in the form of questions:

“What could be substituted to get the walrus out of the bathtub?”

“Is there something that could be adapted to get the walrus out of the bathtub?” etc...

*NOTE: Teacher should decide if and when to intervene if you think some of the answers are ‘inappropriate’- understanding the balance between ‘inappropriate vs. deferring judgment’*

After 3 minutes, use a “different perspective prompt”. Each group will select a character from the story (“How would a fireman/clam delivery person/seagull get the walrus out of the bathtub?) Then ask them to think of a new ending for how this character will get the Walrus out of the bathtub. Allow the groups time to brainstorm and then ask them to plan a short skit to act out their new story ending. Encourage all students to participate.

Bring the class together to have groups perform their story ending in front of the larger group.

**Activity: SCAMPER the Ending (optional, 10 minutes):**

*NOTE: This exercise builds off the previous activity and is intentionally designed to be an independent activity to allow students to practice the skills of ideating on their own.*

Ask each student to pick 3 or more SCAMPER verbs and a different character from the story and do this exercise (from the group activity above) on their own. Have students draw or write their new story ending on paper (rather than act it out.)

**Closure/Check for understanding:**

Students will use a Ticket Out the Door or in a Think-Pair-Share ask students to turn in their drawing or writing of their new story ending.

*NOTE: Teacher may post these drawings/writing samples around the classroom for a Gallery Walk or general viewing.*

## IDEAS FOR VIRTUAL INSTRUCTION

### **SCAMPER:**

*Students may watch the SCAMPER video. Then ask them to SCAMPER a drinking straw on their own. Students can share their ideas in the chat, using a shared document or Zoom breakout rooms.*

### **Change/SCAMPER the Ending:**

*Ask students to change the ending of the story.” This walrus MUST be removed from the bathtub- how might this happen?” Provide some prompts to guide their thinking :*

- *“What could be substituted to get the walrus out of the bathtub?”*
- *“Is there something that could be adapted to get the walrus out of the bathtub?” etc...*

*Ask each student to pick 3 or more SCAMPER verbs and a different character from the story and do this exercise (from the group activity above) on their own. Have students draw or write their new story ending on paper. Students can share their ideas in the chat, using a shared document or Zoom breakout rooms.*