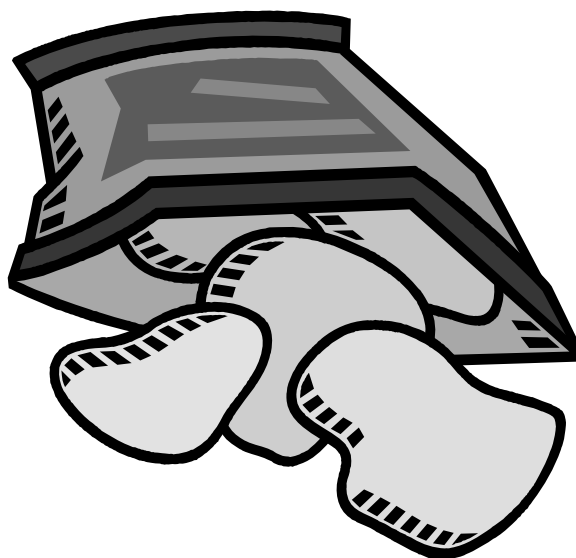




Lesson 1

Introduction to Product Life Cycles



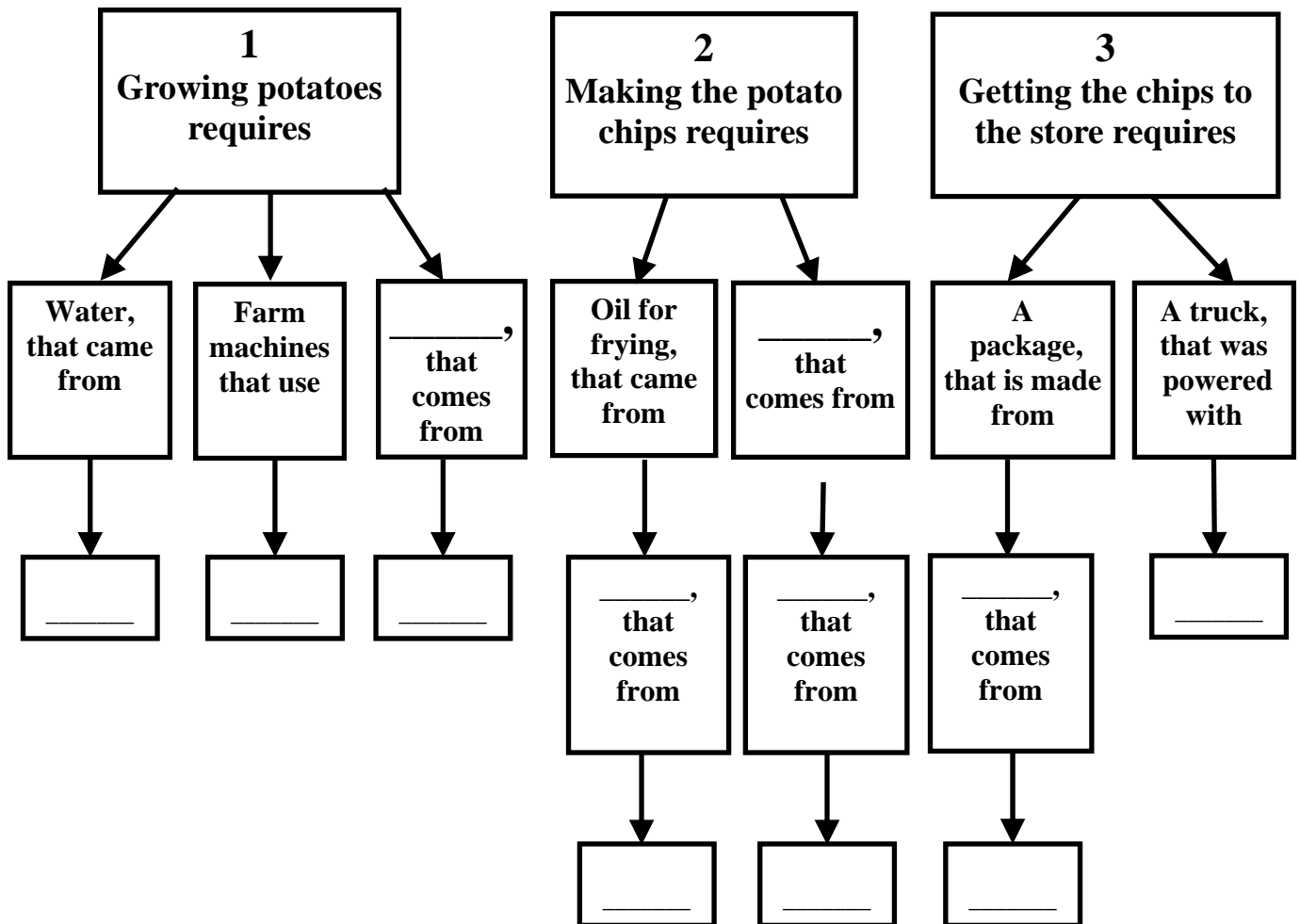
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Directions

1. Look at the diagram below. Read the phrase in box 1, and continue reading down. When you come to a blank, fill it in with a logical word that helps tell the life story of potato chips.
2. Add more arrows and boxes to help tell more of the potato chip's life story.
3. Do the same for boxes 2 and 3.
4. **Guidelines:** There is no 'right' answer. Just try to think and add as much information as you can. It's OK to guess.

LIFE STORY OF POTATO CHIPS





Connections Across Time and Place

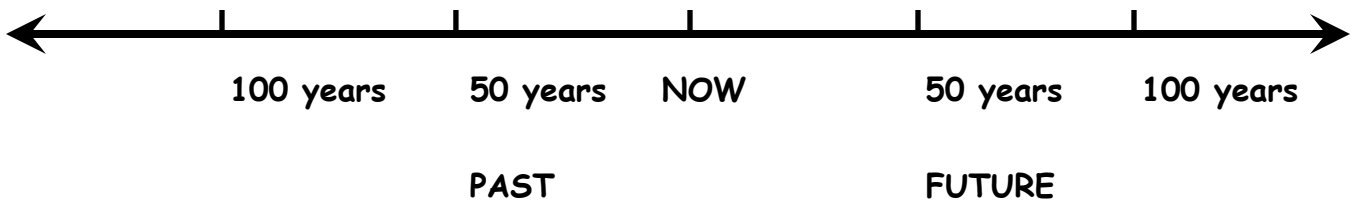
Directions:

1. Read the stages of the life story of the potato chips, **Stages in the Life Story of a Bag of Potato Chips**: Each stage tells when and where it took place. (The time is underlined, and the **place** is **bolded**.)
2. On the timeline shown in the teacher transparency, write the number of each stage to show when it took place. (Hint: You may have to extend the timeline.) For stage 2, base your response on the first sentence.
3. Then, write the number of each stage on the map to show **where** it took place. For Stage 2, base your response on the first sentence.
4. The next two transparencies will help you show the students how to start this on their student handout. The third transparency has the answer key.



Stages in the Life Story of a Bag of Potato Chips:

1. **GROWING THE POTATO:** The potato, a russet Burbank, was grown in **Idaho**. The potato was harvested three months ago, and it grew for five months before that, so the potato 'was born' about eight months ago.
2. **MANUFACTURING:** The potatoes were taken to a factory in **Ohio** about six months ago. (The potatoes were fried in corn oil made from last fall's crop from Iowa.)
3. **PACKAGING:** The potato chip bag is made from polyethylene, a plastic made from petroleum oil that was imported from **Venezuela**. This oil was formed from the decayed remains of animals and plants that were alive about 400 million years ago.
4. **TRANSPORTATION:** The potato chips came by truck from the factory to the store. The fuel for the truck was made from petroleum oil from **Saudi Arabia**. The oil was formed from the decayed remains of plants and animals that were alive about 400 million years ago.
5. **DISPOSAL OF THE BAG:** The potato chip bag will go into a landfill in **Michigan**. There, it will take at least 250 years to break into little pieces.





MANUFACTURING SIMULATION STAGE 1: Design your poster

In this activity, you will explore product life cycles by “manufacturing” a poster that represents the career interests of your team members. As you create the poster, you will try to reduce the materials you use and the wastes you produce.

In this stage, you will act as **product planners** to decide the career themes of the poster.

GUIDELINES AND PENALTIES.

Task a: Develop a team name. Ask everyone in the group to share three characteristics about themselves. (This could be a favorite sport, hobby, a favorite music star, or a special talent.)

Is there one thing that everyone has in common? For example, does everyone in your group like a certain music star or live in the same town? Find some common element to develop a name for your team, and write it in the space below:

Our team name: _____

***EARN A REWARD TOKEN** for writing down your team name below within the time provided.
GET A PENALTY TOKEN if you don't come up with a name within the time provided.*

Task b: Have each group member identify one career that she or he is interested in. (Take turns.) One person in the group records names and careers in the spaces below:

Name: _____ Career interest: _____

Name: _____ Career interest: _____

Name: _____ Career interest: _____

Name: _____ Career interest: _____

Name: _____ Career interest: _____

***EARN A REWARD TOKEN** if you complete the task within the time provided.
GET A PENALTY TOKEN if you don't complete the task within the time provided.*



MANUFACTURING SIMULATION STAGE 2:

Prepare raw materials

In this stage, you will think like **product engineers** to gather and prepare the raw materials for your poster. You can gain tokens by minimizing the amount of materials you use, or get penalties for creating extra waste. Be sure to finish the tasks within the time provided.

Task a. As a team, use the magazine to select words, pictures, or images to represent the career interests of your team members. Select one word, picture, or image for each person, and cut the items from the magazine. You should cut up **only one page** from the magazine for each word, image, or picture (up to five pages if you have 5 people on your team).

EARN A REWARD TOKEN for completing this task with the time provided by your teacher.

BONUS: Get an extra reward token if you reduce waste by cutting up fewer than one magazine page per person. (You can do this if you select two or more words/images/pictures from the same page.)

GET A PENALTY TOKEN for every extra page (beyond the number in your team) that you cut from the magazine.

Task b. Have one person put on the gloves and mix a third color from the two colors of paint you are given. You must clean your brush if you use it to mix the paints.

EARN A REWARD TOKEN if you can mix the paints without getting the brush bristles or water dirty.

GET A PENALTY TOKEN each time you create "pollution" by doing any of the following:

- *spilling the paint*
- *getting the brush bristles dirty*
- *using your fingers or other body parts to paint with*
- *getting the water dirty*
- *getting any part of a glove dirty*
- *getting the table or newspaper dirty*



MANUFACTURING SIMULATION STAGE 3:

Manufacture your poster

In this stage, you will think and act like **production managers** to create your poster. Be sure to finish the tasks within the time provided.

Task a. Glue your images onto your paper.

***EARN A REWARD TOKEN** if you use any scrap paper as part of your design.*

***GET A PENALTY TOKEN** if you create pollution by getting glue on the table or newspaper.*

Task b. Choose 1-2 people to decorate the poster with the paints. You must use all three of your colors. Use the paint to add borders, words, graphics, or other elements. You must rinse your paintbrush before changing colors.

***EARN A REWARD TOKEN** if you develop a pollution-preventing painting method that keeps the brush clean or reduces the amount of water needed to rinse the brush. Your teacher will decide if the technique earns a token.*

***GET A PENALTY TOKEN** if you create pollution by:*

- *spilling the paint*
- *using your fingers or other body parts to paint with*
- *not rinsing your brush between colors*
- *getting the water dirty*
- *getting any part of a glove dirty*
- *getting the table or newspaper dirty*
- *getting your gloves dirty*
- *getting your fingers dirty*
- *wiping paint on your clothes*



Identifying Inputs and Outputs

Making products involves **inputs** and **outputs**. **Inputs** are “ingredients” – the raw materials and energy needed to create something. For example, **inputs** for a potato chip include oil, potatoes, the fertilizers needed to grow the potatoes, and energy needed to cook them. **Outputs** are the wastes created when making or consuming a product. Making and eating potato chips creates potato scraps, leftover frying oil, the thrown-away bag, and the pollution created by the trucks that carried the chips to the store. All of these are **outputs**.

Directions: In the diagram below, identify the **inputs** and **outputs** of each stage of your poster’s life cycle. You can put more than one word in each circle.

