



The Concept of Time

Lesson Length: Approximately 1 ½ hours

Curriculum Alignment Code	GOAL 1	GOAL 2	GOAL 3	GOAL 4	GOAL 5	GOAL 6
					X	X

Instructional Purpose

- To explore the concept of time
- To make generalizations about time

Assignment Overview

- Generate examples of time.
- Categorize examples of time.
- Generate non-examples of time.
- Develop generalizations about time.
- Consider the unit generalizations.

Materials

- **Teacher Resource 2A**
- **Student Activity Page 2A**
- Chart paper and markers
- Class set of *The Phantom Tollbooth* by Norton Juster (for homework assignment)



Notes to Teacher

- Throughout this unit, students will return to and reflect on a set of generalizations about time:
 - Time transforms people, places, and things;
 - Time includes the past, present, and future;
 - Time can be measured;
 - Time can be perceived as passing quickly or slowly; and
 - Time can be used wisely or wasted.
- Before encountering this set of generalizations, however, students will generate their own examples of and generalizations about time, engaging in critical thinking about phenomena that are already familiar to them. This critical thinking process involves both deductive reasoning, as students generate examples and non-examples of time, and inductive reasoning, as students categorize their examples and develop generalizations about time. This concept development model is explained in greater detail in “The Taba Model of Concept Development” in Section 2.

1. Generate Examples of Time

- From their completed Lesson 1 homework assignment, invite students to share their descriptions of a time when they were bored.
 - *Why was this time boring to you? What would you rather be doing? How did this differ from what you were being expected to do with your time?*
- Explain that students will be considering the concept of time as they study the literature in this unit. In this lesson they will do a four-part activity in groups to explore the concept of time. The four parts of the activity are listing examples of time, categorizing examples of time, listing non-examples of time, and making generalizations about time.
- Divide the class into groups of four or five students. Distribute four sheets of chart paper and markers to each group.
- Tell groups to brainstorm about 25 ideas or more about time. Have them record all responses on one of their sheets of chart paper. Use the following questions to begin a discussion and then have groups continue the discussion:

Discussion Questions

- What words come to mind when you think about time?
 - What are some examples of the different characteristics of time?
 - How is time measured?
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- Circulate around the room as groups brainstorm and discuss. Use the discussion questions to trigger further discussion or to help a group that is struggling.
 - After groups finish brainstorming, have them share their ideas with the rest of the class. Allow groups to add ideas and examples to their list based on the class discussion.

2. Categorize Examples of Time

- Explain that a *category* is a group of things or ideas that are similar in one or more ways. Tell students to think of categories for their ideas about time by putting their ideas and examples into groups and giving each group a title.
- Have them write the groups and their titles on a new sheet of chart paper. Use the following questions to begin a discussion, then have groups continue the discussion as they categorize their ideas.

Discussion Questions

- Review the ideas you've written down. What is similar about some of the ideas? How can these ideas be grouped together based on this similarity?
 - Do all of your ideas fall into a group? Might some of them belong in more than one group?
 - Is there a different way to group some or all of your ideas? What other categories might you use?
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- Circulate around the room as groups discuss their categories. Use the discussion questions to trigger further discussion or to help a group that is struggling.
 - After groups finish categorizing their ideas, have them share their categories with the rest of the class.

3. Generate Non-Examples of Time

- Tell students to brainstorm a list of characteristics that would not illustrate the concept of time. Have them record their responses on a new sheet of chart paper.
- Use the following questions to begin a discussion and then have the groups continue the discussion as they list things that are not part of the concept of time.

Discussion Questions

- What evidence or proof do you have that these are not a part of the concept of time?
 - How might you group these ideas? What would you call each group? Why? How are these categories different from those you created for ideas about time?
- Circulate around the room as groups discuss their categories. Use the discussion questions to trigger further discussion or to help a group that is struggling.
 - After groups finish categorizing their ideas, have them share their categories with the rest of the class.

4. Develop Generalizations About Time

- Explain that a *generalization* is a statement that is always or almost always true. Tell students to consider their examples and categories of time and develop several generalizations about time. Have them record their generalizations on a new sheet of chart paper. Tell groups to use the following questions to guide their discussion.

Discussion Questions

- What are some characteristics of time?
 - What can you say about time that is usually true?
- Circulate around the room as groups discuss their generalizations. Use the discussion questions to trigger further discussion or to help a group that is struggling.
 - After groups finish, have them share their generalizations with the rest of the class.

5. Consider the Unit Generalizations

- After students share their own generalizations about time, have them turn to **Student Activity Page 2A**. Read the generalizations on this page together. Explain that the class will be reflecting on these generalizations throughout the unit. Tell students to be sure to keep this page available throughout the unit.
- Have students work in groups to complete **Student Activity Page 2A**; if preferable, groups may copy the model and complete it on chart paper. Tell students to write two or three examples that illustrate each generalization. Provide time for groups to share responses with the class. Consider using samples provided on **Teacher Resource 2A** to add to the discussion.
- Ask students the following questions to generate discussion about the generalizations.

Discussion Questions

- **Time transforms people, places, and things.** How do people and things change over time? Give examples of how the appearance, nature, or character of things might transform over time?
- **Time includes the past, present, and future.** How does time link the past to the future? How can changes in the present affect the characteristics of the future?
- **Time can be measured.** What are the common units of time? Is there a smallest increment of time? As a scientist, how would you measure time? What is the difference between a nanosecond and an eon?
- **Time can be perceived as passing quickly or slowly.** How do you perceive time when you are bored? How do you perceive time when you are engaged? How does our perception of time change as we grow older?
- **Time can be used well or wasted.** What would you consider a waste of time? What would you consider time well spent?

- Display completed Time Model charts in the classroom, and tell students to keep their copies readily available for reference and additions throughout the unit.



Notes to Teacher

- The concept development model employed in this lesson is explained in detail in Section 2, Teaching Tips for Implementing This Unit. Stages of the model may be expanded as necessary for adequate development of student understanding.
- The Concept Development Model is used in the William & Mary language arts curriculum units, and some students may have participated in a concept development activity in a previous unit. Nevertheless, teachers are encouraged to work through the model with students because of the new insights students may bring about the concept of *time*.
- Lessons throughout the unit will refer to the list of generalizations included in this lesson. These generalizations should be posted in the classroom, and students should keep their Time Models for reference throughout the unit. The generalizations developed by students should be aligned to this set and may also be posted and used for reference throughout the unit.
- The writing assignment given for homework should be placed into a writing portfolio that students will maintain throughout the unit. This portfolio may be used to monitor student progress and as a reference for assignments throughout the unit.



Homework

The following assignments may be given to students for homework:

- Tell students to select one of the generalizations about time as a topic for an essay. In the essay, they should give three or more reasons why the generalization is true. Tell them to provide explanations and examples to support each reason, and remind them to include a conclusion that summarizes and, if possible, extends the main idea of the essay.
- Have students read Chapters 1 and 2 of *The Phantom Tollbooth* (to be discussed in Lesson 3).



Extension

The following option may be given to students as an extension activity:

- Have students look in the newspaper, magazine, or on the Internet for an article on current research about time. They should read the article, summarize its content, and share the information with their classmates in an engaging manner.

Time transforms people, places, and things.

Examples: As one gets older, one sees things differently. Over time plants, animals, and cities change.

Time includes the past, present and future.

Examples: In the present, one can remember the past and imagine the future. Time is a continuum and can be represented by a timeline.

Time can be measured.

Examples: Time can be measured in nanoseconds up to an eon. Increments of time vary according to what concepts are being represented.

Time can be perceived as passing quickly or slowly.

Examples: As one ages, our view of time changes. Time seems to pass quickly or slowly depending on what one is doing.

Time can be used well or wasted.

Examples: One's use of time reflects one's values.

Name: _____ Date: _____



Activity 2A

Time Model

Directions: Read the generalizations on this page together. Your teacher will generate a discussion asking for examples of each generalization.

- Time transforms people, places, and things.

- Time includes the past, present and future.

- Time can be measured.

- Time can be perceived as passing quickly or slowly.

- Time can be used well or wasted.