Handouts

UNIT 2, MODULE 3:
Generating Examples and Nonexamples

TEKS Connections

The routine in this module helps students to strengthen and deepen their understanding of vocabulary in all content areas. The most clearly stated connections are in the Mathematics TEKS, ELPS, and CCRS below.

Mathematics

Grade 6:

(13) Underlying processes and mathematical tools. The student uses logical reasoning to make conjectures and verify conclusions. The student is expected to:

(A) make conjectures from patterns or sets of examples and nonexamples;

Grade 7:

(15) Underlying processes and mathematical tools. The student uses logical reasoning to make conjectures and verify conclusions. The student is expected to:

(A) make conjectures from patterns or sets of examples and nonexamples;

Grade 8:

(16) Underlying processes and mathematical tools. The student uses logical reasoning to make conjectures and verify conclusions. The student is expected to:

(A) make conjectures from patterns or sets of examples and nonexamples;

SOURCE: Texas Education Agency (TEA), 2006.

Science

Grade 6–7:

(2) Scientific investigation and reasoning. The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to:

(B) design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology;

> *Asking questions and formulating hypotheses in science is similar to the type of instructional activity we introduce in this module. Anticipation-Reaction Guides stimulate students' thinking about the subject and encourage them to form hypotheses that will drive their focus while reading and prompt discussion and analysis after reading.*

Grade 8:

(2) Scientific investigation and reasoning. The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to:

(B) design and implement comparative and experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology;

Asking questions and formulating hypotheses in science is similar to the type of instructional activity we introduce in this module. Anticipation-Reaction Guides stimulate students' thinking about the subject and encourage them to form hypotheses that will drive their focus while reading and prompt discussion and analysis after reading.

SOURCE: TEA, 2009.

English Language Proficiency Standards (ELPS) Connections

Learning Strategies

The student is expected to:

1(C) use strategic learning techniques such as concept mapping, drawing, memorizing, comparing, contrasting, and reviewing to acquire basic and grade-level vocabulary.

1(E) internalize new basic and academic vocabulary by using and reusing it in meaningful ways in speaking and writing activities that build concept and language attainment.

4(D) use prereading supports such as graphic organizers, illustrations, and pretaught topic-related vocabulary and other prereading activities to enhance comprehension of written text.

SOURCE: TEA, 2007.

College and Career Readiness Standards (CCRS) Connections

II. Reading

B(1) Identify new words and concepts acquired through study of their relationships to other words and concepts.

Cross-Disciplinary Standards

II. Foundational Skills

A(2) Use a variety of strategies to understand the meanings of new words

SOURCE: TEA, 2008b.

Frayer Model Template
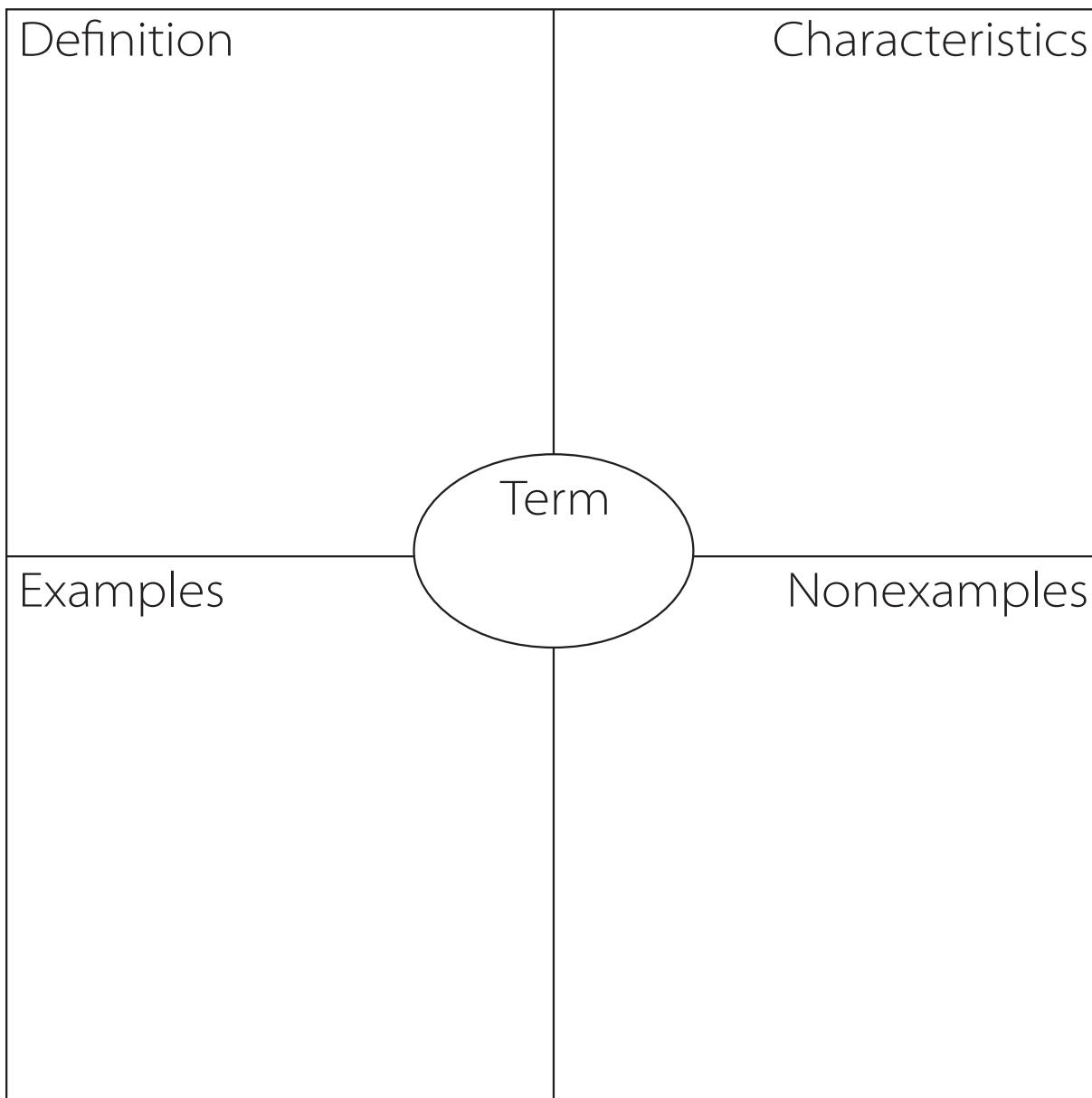
Definition	Characteristics
Examples	Nonexamples

Term

Frayer Model adapted from Frayer, D. A., Frederick, W. C., & Klausmeier, H. G. (1969). *A schema for testing the level of concept mastery* (Technical report No. 16). Madison, WI: University of Wisconsin Research and Development Center for Cognitive Learning.

Completed Frayer Model:
English Language Arts Example 1
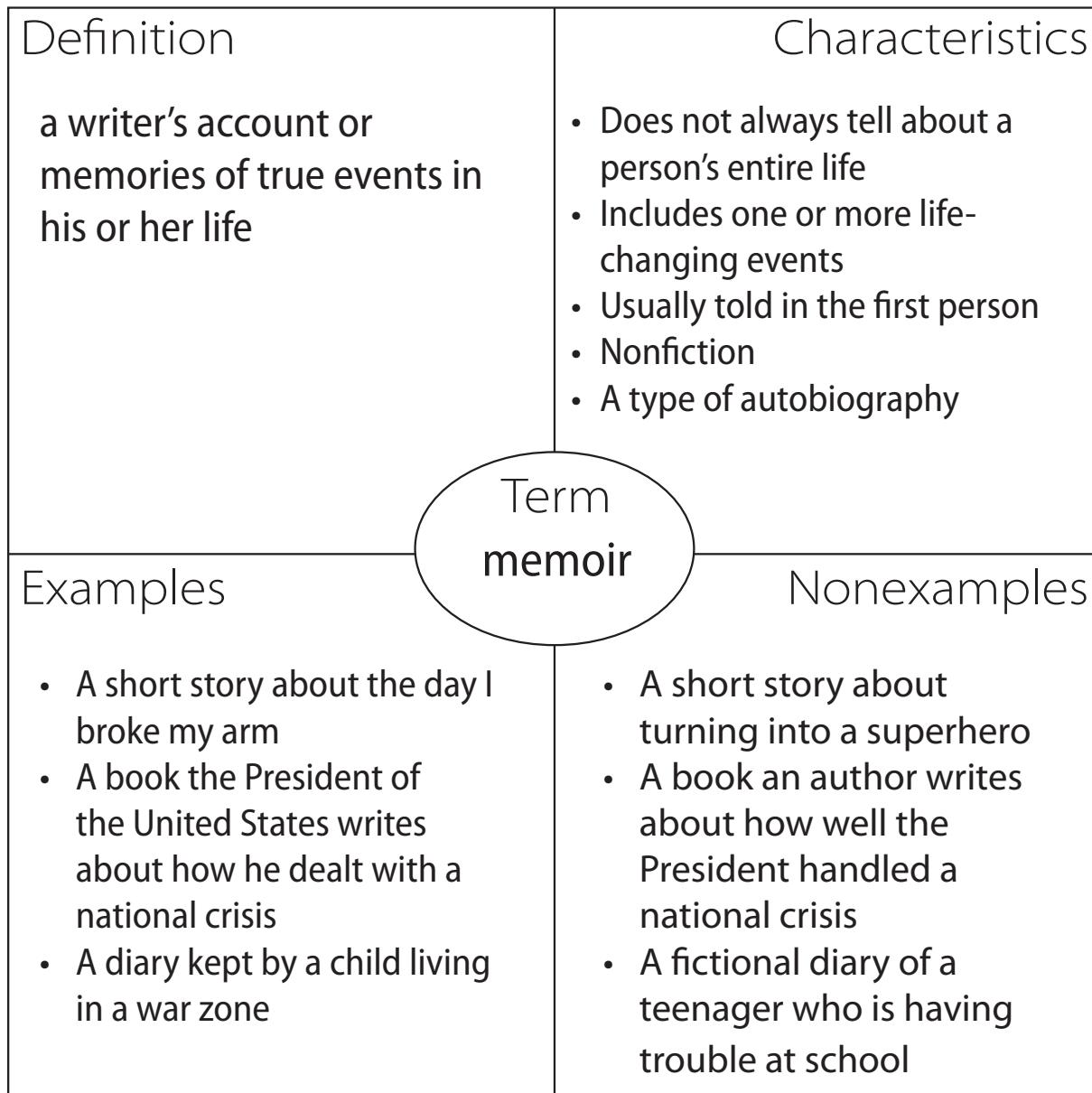
Definition	Characteristics
a writer's account or memories of true events in his or her life	• Does not always tell about a person's entire life • Includes one or more life-changing events • Usually told in the first person • Nonfiction • A type of autobiography

Term
memoir

Examples	Nonexamples
• A short story about the day I broke my arm • A book the President of the United States writes about how he dealt with a national crisis • A diary kept by a child living in a war zone	• A short story about turning into a superhero • A book an author writes about how well the President handled a national crisis • A fictional diary of a teenager who is having trouble at school

Frayer Model adapted from Frayer, D. A., Frederick, W. C., & Klausmeier, H. G. (1969). *A schema for testing the level of concept mastery* (Technical report No. 16). Madison, WI: University of Wisconsin Research and Development Center for Cognitive Learning.

Please see next page for TEKS information.

English Language Arts TEKS

Grade 6

(7)   Reading/Comprehension of Literary Text/Literary Nonfiction. Students understand, make inferences, and draw conclusions about the varied structural patterns and features of literary nonfiction and provide evidence from text to support their understanding. Students are expected to identify the literary language and devices used in memoirs and personal narratives and compare their characteristics with those of an autobiography.

> *Accomplishing this knowledge and skills statement would occur in stages as students first built a surface-level understanding of the definition and characteristics of memoirs and then deepened their understanding by examining examples and nonexamples on the Frayer Model. To fully accomplish the student expectation within this knowledge and skills statement, it would be necessary for the teacher to extend the lesson to include a comparison and contrast of a memoir with an autobiography. Other literary terms in grades 6–8 can be explored deeply using the Frayer Model.*

SOURCE: TEA, 2008a.

Completed Frayer Model:
English Language Arts Example 2

Definition	Characteristics
A novel set in the past that contains references to significant events in history. The writer may blend factual information with fictional characters, dialogue, details, and events.	• Based on historical fact • Set in the past • Set in a real time and place • Some fictional aspects, such as characters, details, or events

Term
historical fiction

Examples	Nonexamples
• Novel about the Civil War • Story about a fictional family during the Great Depression • *Esperanza Rising* by Pam Munoz Ryan • *Number the Stars* by Lois Lowry	• A general's personal account of the events leading to the Iraq War • Story about a family who lives on the moon • *The Lord of the Rings* by J.R.R. Tolkien • *Tuck Everlasting* by Natalie Babbitt

Frayer Model adapted from Frayer, D. A., Frederick, W. C., & Klausmeier, H. G. (1969). *A schema for testing the level of concept mastery* (Technical report No. 16). Madison, WI: University of Wisconsin Research and Development Center for Cognitive Learning.

Please see next page for TEKS information.

English Language Arts TEKS

> *The following is not specific to historical fiction and should be addressed across genres.*

(3)   Reading/Comprehension of Literary Text/Theme and Genre. Students analyze, make infer-ences, and draw conclusions about theme and genre in different cultural, historical, and contemporary contexts and provide evidence from the text to support their understanding. Students are expected to:

Grades 6–7:

(C) analyze how place and time influence the theme or message of a literary work.

Grade 8:

(C) explain how the values and beliefs of particular characters are affected by the historical and cultural setting of the work.

> *The example provided here is for illustrating the use of the instructional routine to TALA participants. It is not intended to convey a preference for a particular novel, nor is it intended as a required reading.*

SOURCE: TEA, 2008a.

Completed Frayer Model:
Math Example 1
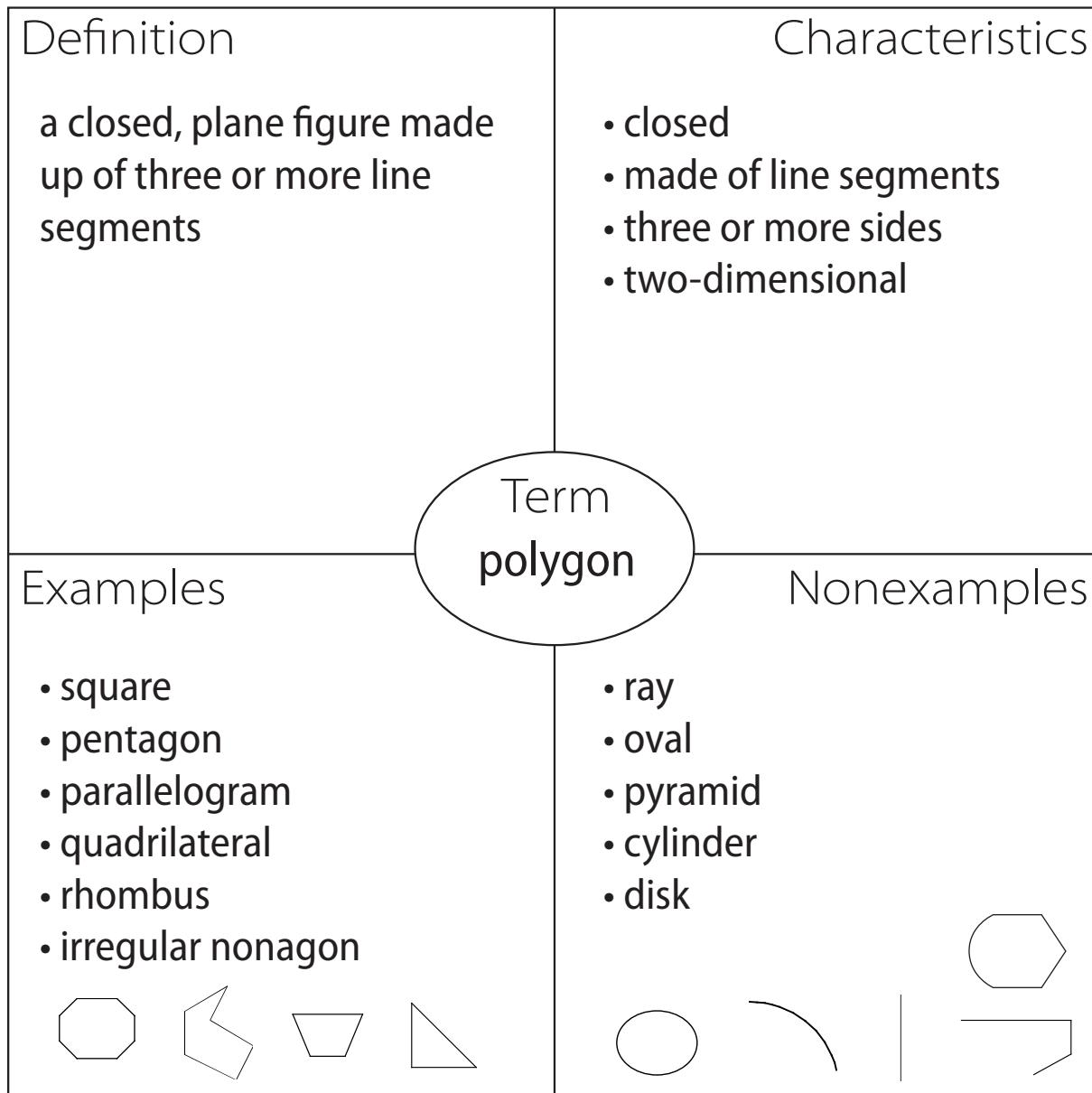
Definition

a closed, plane figure made up of three or more line segments

Characteristics

- closed
- made of line segments
- three or more sides
- two-dimensional

Term
polygon

Examples

- square
- pentagon
- parallelogram
- quadrilateral
- rhombus
- irregular nonagon

Nonexamples

- ray
- oval
- pyramid
- cylinder
- disk

Frayer Model adapted from Frayer, D. A., Frederick, W. C., & Klausmeier, H. G. (1969). *A schema for testing the level of concept mastery* (Technical report No. 16). Madison, WI: University of Wisconsin Research and Development Center for Cognitive Learning.

Please see next page for TEKS information.

Mathematics TEKS

Grade 6:

(6)   Geometry and spatial reasoning. The student uses geometric vocabulary to describe angles, polygons, and circles.

Students could use the Frayer Model in this way to prepare for lessons that address any of the student expectations for this knowledge and skill statement.

SOURCE: TEA, 2006.

Completed Frayer Model:
Math Example 2
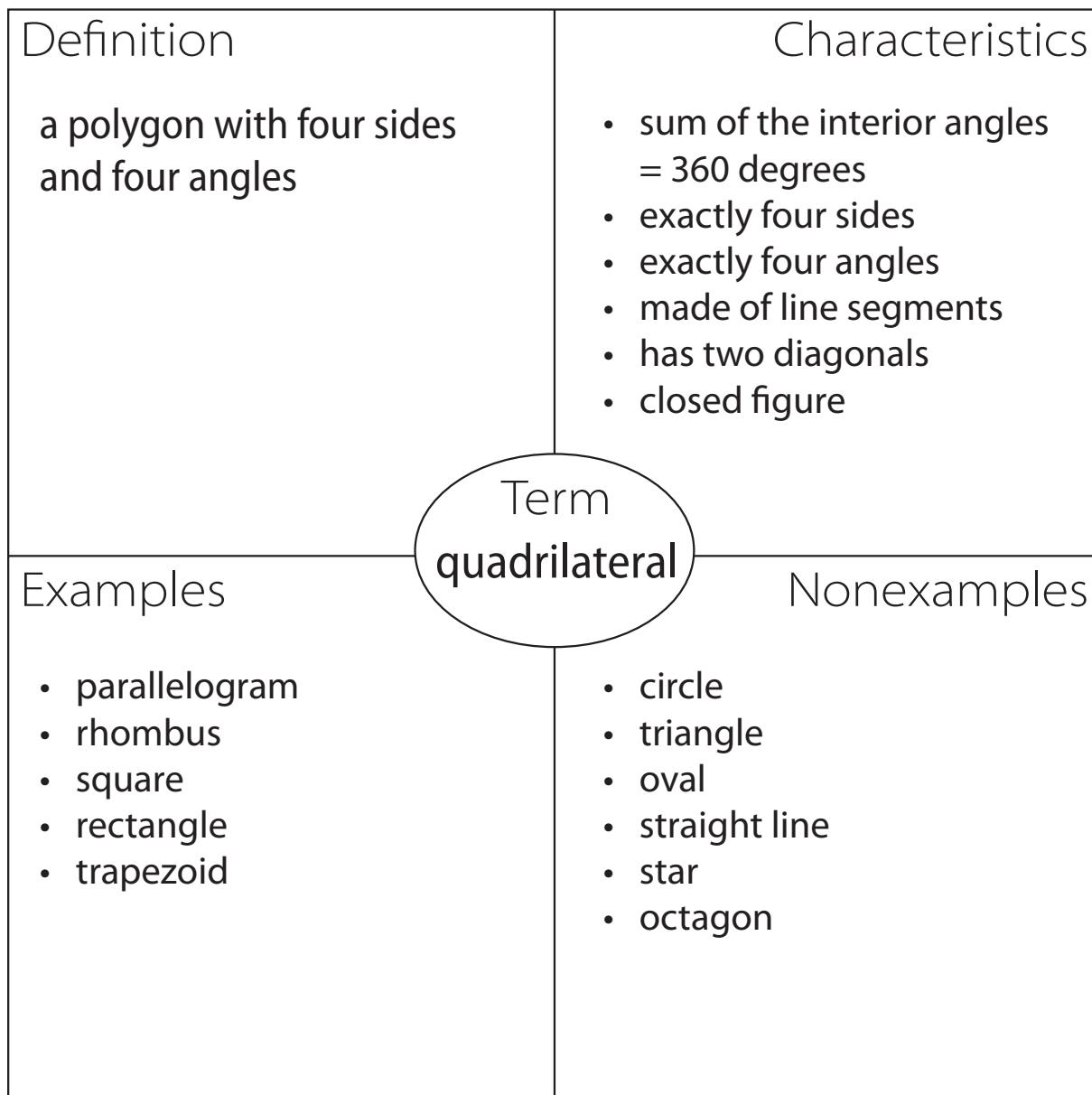
Definition	Characteristics
a polygon with four sides and four angles	• sum of the interior angles = 360 degrees • exactly four sides • exactly four angles • made of line segments • has two diagonals • closed figure

Term
quadrilateral

Examples	Nonexamples
• parallelogram • rhombus • square • rectangle • trapezoid	• circle • triangle • oval • straight line • star • octagon

Frayer Model adapted from Frayer, D. A., Frederick, W. C., & Klausmeier, H. G. (1969). *A schema for testing the level of concept mastery* (Technical report No. 16). Madison, WI: University of Wisconsin Research and Development Center for Cognitive Learning.

Please see next page for TEKS information.

Mathematics TEKS

Grade 6:

(6) Geometry and spatial reasoning. The student uses geometric vocabulary to describe angles, polygons, and circles. The student is expected to:

(B) identify relationships involving angles in triangles and quadrilaterals.

Grade 7:

(6) Geometry and spatial reasoning. The student compares and classifies two- and three-dimensional figures using geometric vocabulary and properties. The student is expected to:

(B) use properties to classify triangles and quadrilaterals.

SOURCE: TEA, 2006.

Completed Frayer Model:
Science Example
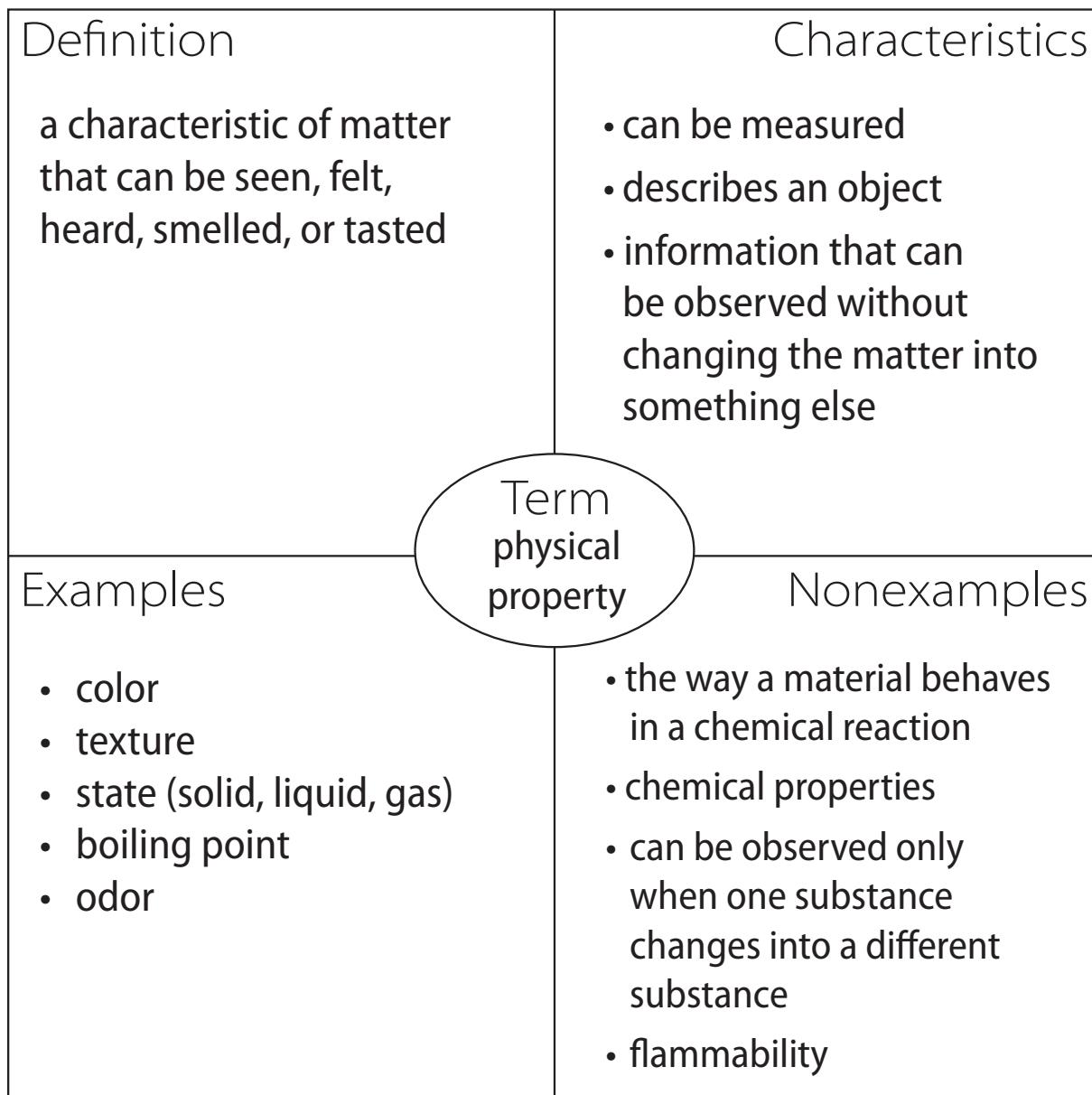
Definition	Characteristics
a characteristic of matter that can be seen, felt, heard, smelled, or tasted	• can be measured • describes an object • information that can be observed without changing the matter into something else

Term
physical
property

Examples	Nonexamples
• color • texture • state (solid, liquid, gas) • boiling point • odor	• the way a material behaves in a chemical reaction • chemical properties • can be observed only when one substance changes into a different substance • flammability

Frayer Model adapted from Frayer, D. A., Frederick, W. C., & Klausmeier, H. G. (1969). *A schema for testing the level of concept mastery* (Technical report No. 16). Madison, WI: University of Wisconsin Research and Development Center for Cognitive Learning.

Please see next page for TEKS information.

Science TEKS

Grades 6–7:

(6)   Matter and energy. The student knows matter has physical properties that can be used for classification.

Grade 8:

(5)   Matter and energy. The student knows that matter is composed of atoms and has chemical and physical properties.

SOURCE: TEA, 2009.

Completed Frayer Model: Social Studies Example

Definition	Characteristics
people moving from one place, region, or country to another	• involves a major change (long distance or large group) • could be forced by natural disaster, economy, warfare • could be a choice because someone wants a different climate, job, or school • permanent or semi-permanent, not temporary

Term
human migration

Examples	Nonexamples
• move from Dar el Salam in Tanzania to Zanzibar • people many years ago walking/floating across the Bering Strait from Russia to North America • people moving from rural areas in the southern United States to cities in the North	• people staying in one place all their lives • geese flying from Canada to Mexico • someone from El Paso, Texas, going to Juarez, Mexico, for the day • driving from a home in the suburbs to a job in the city

Frayer Model adapted from Frayer, D. A., Frederick, W. C., & Klausmeier, H. G. (1969). *A schema for testing the level of concept mastery* (Technical report No. 16). Madison, WI: University of Wisconsin Research and Development Center for Cognitive Learning.

Please see next page for TEKS information.

Social Studies TEKS

Grade 6:

(17) Culture. The student understands relationships that exist among world cultures. The student is expected to:

(A) identify and describe how culture traits such as trade, travel, and war spread;

(D) identify and define the impact of cultural diffusion on individuals and world societies;

(E) identify examples of positive and negative effects of cultural diffusion.

Grade 7:

(17) Geography. The student understands the characteristics, distribution, and migration of population in Texas during the 19th, 20th, and 21st centuries. The student is expected to:

(A) analyze why immigrant groups came to Texas and where they settled;

(B) analyze how immigration and migration to Texas in the 19th, 20th, and 21st centuries have influenced Texas;

(C) analyze the effects of the changing population distribution and growth in Texas during the 20th and 21st centuries and the additional need for education, health care, and transportation; and

(D) describe the structure of the population of Texas using demographic concepts such as growth rate and age distribution.

Grade 8:

(17) Geography. The student understands the physical characteristics of North America and how humans adapted to and modified the environment through the mid-19th century. The student is expected to:

(A) analyze how physical characteristics of the environment influenced population distribution, settlement patterns, and economic activities in the United States during the 17th, 18th, and 19th centuries;

(C) describe how different immigrant groups interacted with the environment in the United States during the 17th, 18th, and 19th centuries.

SOURCE: TEA, 2010.

Frayer Model: Adolescent
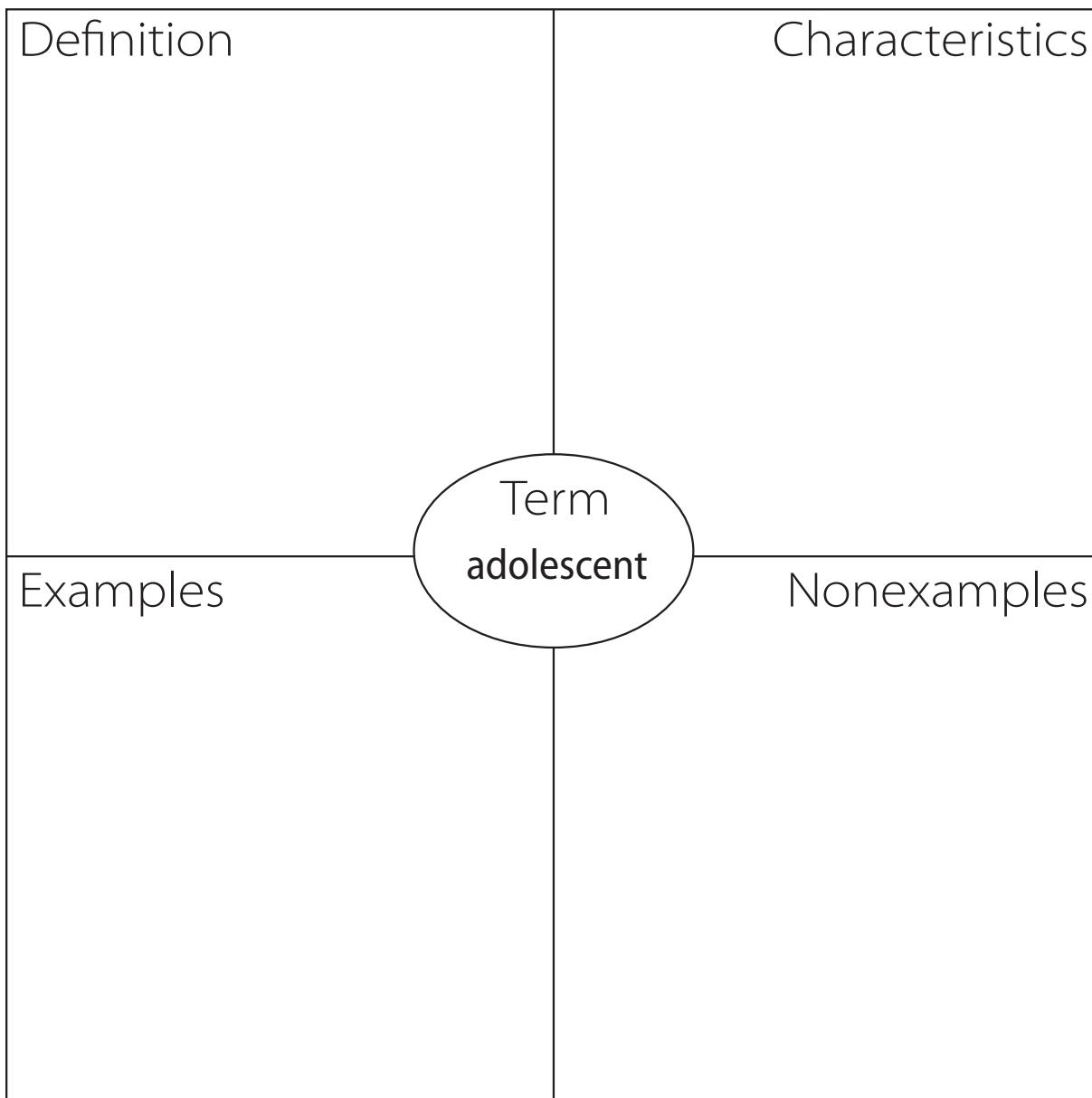
| Definition	Characteristics
Examples	**Nonexamples**

Term

adolescent

Frayer Model adapted from Frayer, D. A., Frederick, W. C., & Klausmeier, H. G. (1969). *A schema for testing the level of concept mastery* (Technical report No. 16). Madison, WI: University of Wisconsin Research and Development Center for Cognitive Learning.

Scaffolding the Frayer Model

- Provide additional examples and nonexamples of concepts, as needed, to support student understanding.

- Always make sure that students have encountered the word and built some conceptual knowledge about it before using the Frayer Model.

- Frequently remind students about characteristics of appropriate examples and nonexamples.

- Try using pictures or manipulatives for examples/nonexamples.

- Return to *I Do*/corrective feedback whenever it is clear that students do not understand the word/concept well enough.

Frayer Model

Definition	Characteristics
Examples	**Nonexamples**

Term
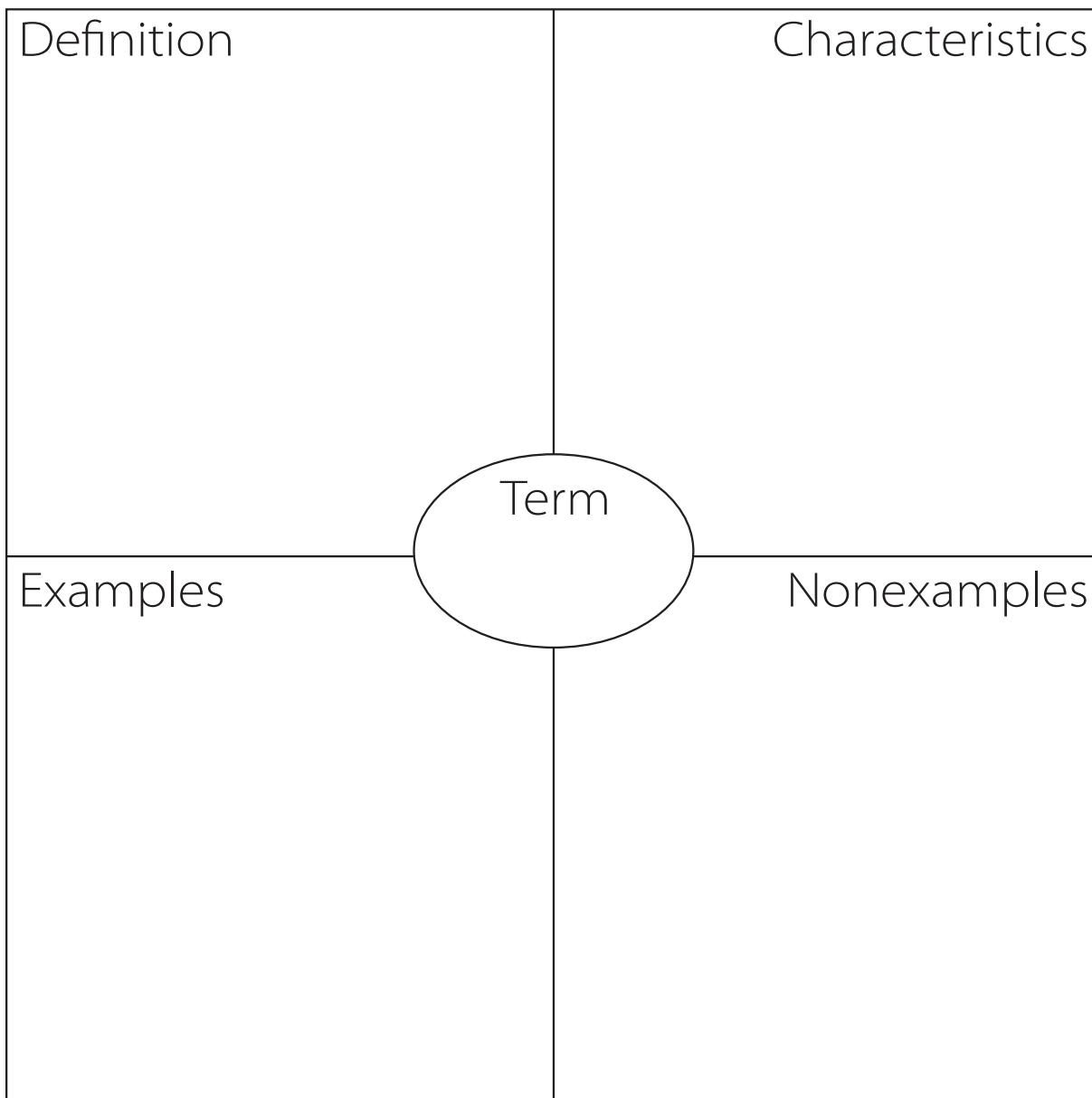
Frayer Model adapted from Frayer, D. A., Frederick, W. C., & Klausmeier, H. G. (1969). *A schema for testing the level of concept mastery* (Technical report No. 16). Madison, WI: University of Wisconsin Research and Development Center for Cognitive Learning.

References

Unit 2: Vocabulary Instructional Routines
Module 3: Generating Examples and Nonexamples

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