

Frayer Model

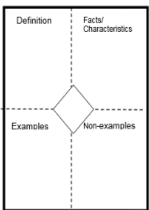
Name of Strategy:	The Frayer Model
Organising Element: Conceptual thinking	Graphic organiser

Purpose of Strategy:

This graphic organiser was designed by Dorothy Frayer and colleagues at the University of Wisconsin to provide for a thorough understanding of new mathematical concepts and vocabulary. Student engagement and collaborative learning are enhanced further through the use of this tool. Teachers will also find that a Frayer Model is a useful pre-assessment strategy.

Description of Strategy

The Frayer Model can be presented to students as an A4 or A3 template or students can make a five-fold template using scrap paper.

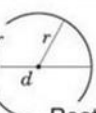
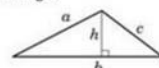
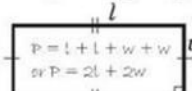
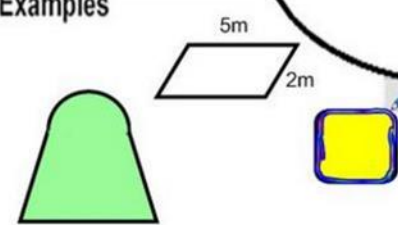



As a rule, place students in mixed ability groups. However, teachers may like to put high ability learners in one group with other students in mixed-ability groups. In bouncing ideas off one another and contributing to class discussion, high ability learners may raise the level of discourse in the classroom which benefits all students.

Teaching Example

Year level: All

Perimeter

Definition <ul style="list-style-type: none"> - the distance around the shape - distance around closed figure - outlining of an object <p style="margin-top: 10px;">-common units include cm, m, km, in, yds, mi</p>	Facts/Characteristics <ul style="list-style-type: none"> - $C = \pi d$ or $C = 2 \pi r$ - add only the numbers on the outside of the shape - the lengths outside an object added together <div style="display: flex; justify-content: space-around; font-size: 0.8em;"> <div style="text-align: center;"> <p>Circle</p> $C = 2\pi r$ $C = \pi d$  </div> <div style="text-align: center;"> <p>Triangle</p>  <p>$P = a + b + c$</p> </div> <div style="text-align: center;"> <p>Rectangle</p>  <p>$P = l + l + w + w$ or $P = 2l + 2w$</p> </div> </div>
Examples 	Non-examples <p>$V = \pi r^2 h$</p> <p>$V = L \times W \times H$</p>  <p>can't find perimeter because it is not a closed figure</p>

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<https://s-media-cacheak0.pinimg.com/736x/c1/0b/d4/c10bd413c2a14ca4aac3921f7f298919.jpg>

As can be seen in the example above, the Frayer Model is carried out in five steps:

1. The concept is placed in the middle.

2. Students provide a definition of the concept in their own words.
3. Students provide facts, properties and characteristics of the concept.
4. Students provide examples of the concept.
5. Students provide non-examples of the concept. Please note - concepts should always be taught using examples and non-examples so that misconceptions are exposed and eliminated.

Visual representations may be used to demonstrate student understanding in any part of the Frayer Model. The use of oral, written, digital and visual strategies make the Frayer Model accessible to all.

References:

Both of these references are excellent resources for teachers using the Frayer Model for the first time.

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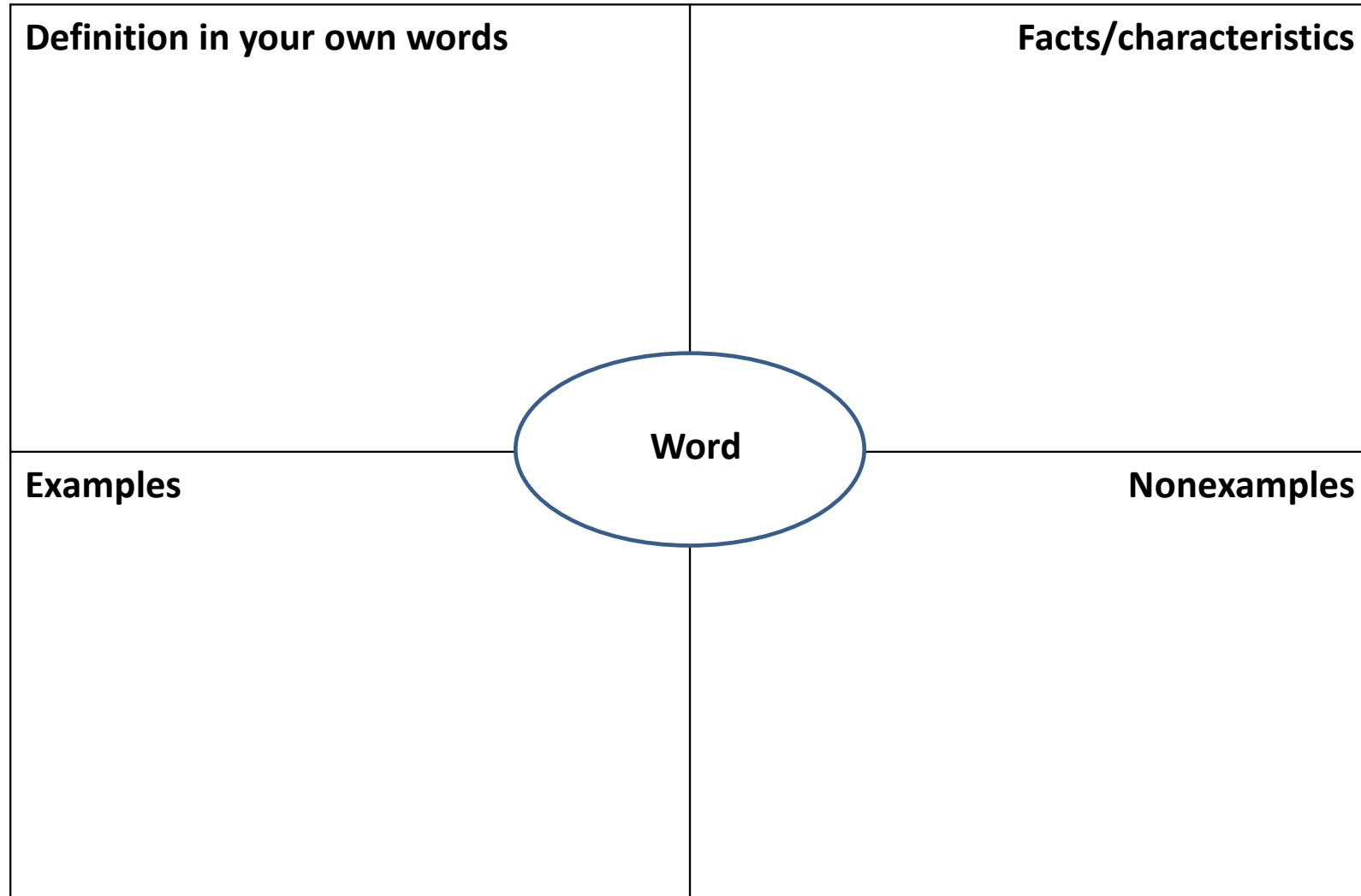
<https://wvde.state.wv.us/strategybank/FrayerModel.html>

Think Literacy: Cross-Curricular Approaches, Grades 7-12, Getting Ready to Read: Extending Vocabulary – The Frayer Model, Mathematics

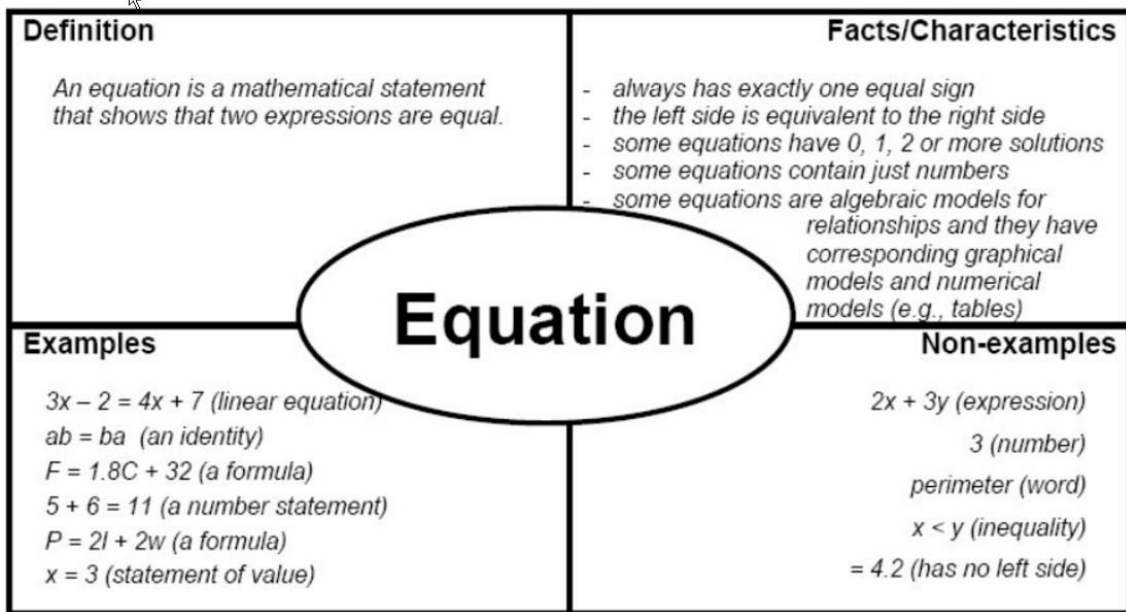
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<http://oame.on.ca/main/files/thinklit/FrayerModel.pdf>

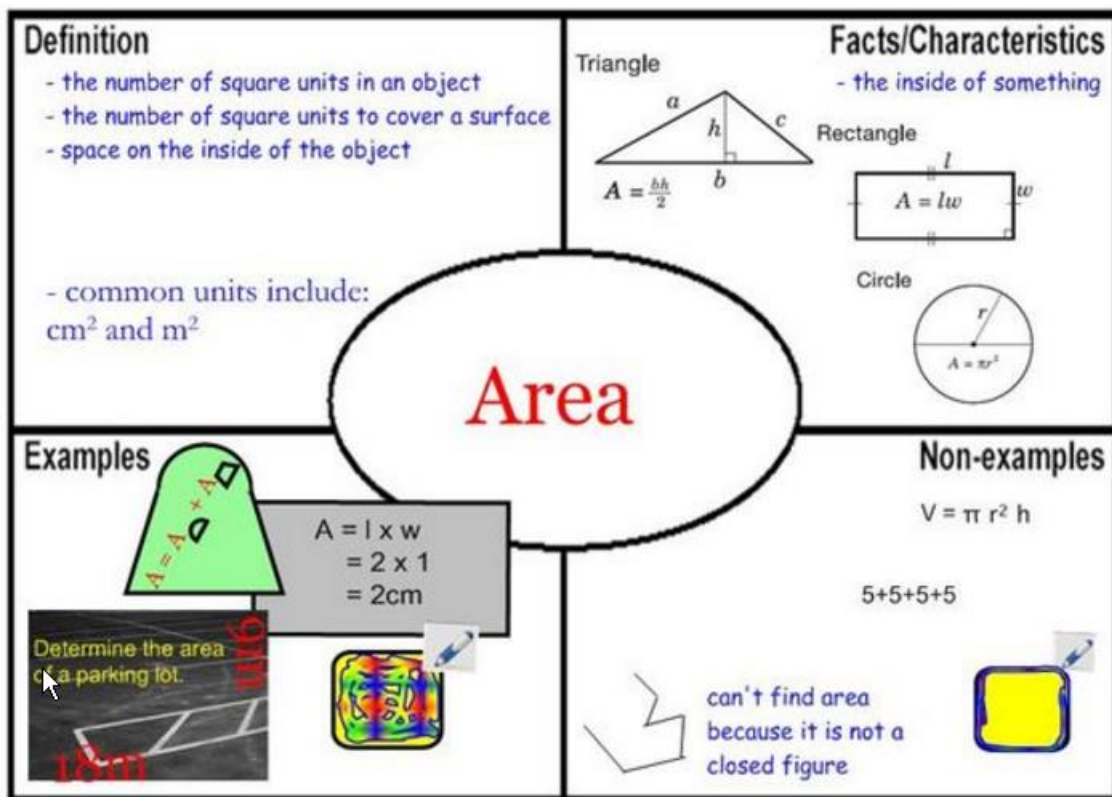
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<p>Definition (In your own words)</p> <p>A simple, closed, plane figure made up of three or more line segments</p>	<p>Facts/Characteristics</p> <ul style="list-style-type: none"> • Closed • Simple (curve does not intersect itself) • Plane figure (2D)
<p>Polygon</p>	
<p>Examples</p> <ul style="list-style-type: none"> • Rectangle • Triangle • Pentagon • Trapezoid • Hexagon 	<p>Nonexamples</p> <ul style="list-style-type: none"> • Circle • Cone • Arrow (ray) • Cube • Letter A

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