SEMANTIC FEATURE ANALYSIS (High School Maths)

What is it?
Semantic Feature Analysis (SFA) is a vocabulary extension practice that is useful for almost any subject, especially when covering topics with complex terminology. In the SFA activity, students analyse and discuss complex words and their meaning-based, or semantic, features. To help organise their thinking, a grid is used to cross reference terms with semantic features (Johnson & Pearson, 1984). Through discussion involving comparing and contrasting terms and their features, students refine their knowledge of key vocabulary items and deepen their understanding of related concepts.

The grid for SFA is simple to use and designed to promote interaction and discussion. On the grid, the key vocabulary terms are listed down the left hand side (for example various key words or terms or select phrases from a text) and then features related to defining the words are listed along the top of the grid (for example types of figurative language). Students then work with others to complete the grid by carefully considering the feature options and placing a tick (✓), a cross (✗) or blank in the grid to indicate whether or not the word might be usefully defined in terms of that feature. If the feature fits somewhat or students are unsure then they can put a dash (-).

Why is it important?
Teaching vocabulary in context has a strong research base and is more effective than giving definitions (Antonacci & O’Callaghan, 2011). The most effective literacy strategies teach words as concepts, linking new information with background knowledge. Semantic Feature Analysis prompts students to compare the similarities and differences between words as they sort ideas into categories. By doing so, students are able to explore connections, make predictions and master important concepts.

Discussion-based approaches to vocabulary teaching have been found to be more effective for promoting vocabulary learning. Giving students opportunities to use words and discuss concepts is essential for building understanding and aiding retention. Teacher-guided discussion is especially valuable (Stahl & Vancil, 1986).

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Things to consider before starting

- SFA works best with groups of words that form fairly tightly knit groups (e.g. features of polygons)
- Decide on a topic and purpose. Is your topic worth the time and effort? Does it require complex definition? Are you setting this up to check prior knowledge or to act as revision?
- To create the grid for your students to use, brainstorm a list of concepts on the topic. Next, try to think of categories they could fit into, or elements they might have in common. Then create the matrix or grid.
- Consider how you will group students for maximum discussion. Mixed ability groups work well in this activity.

Steps in a Semantic Feature Analysis Session

1. Introduce the thinking task. e.g. "Today we are going to revise our understanding of polygons and their geometric features. I know there are a lot of tricky terms in this area so I want to give you an opportunity to talk through them again to be sure you remember what each one is."
2. If your students are new to the SFA practice, don’t forget to model how to do it.
3. Organise students into working groups and hand out the SFA grid.
4. As students work, circulate and guide discussion with prompts, examples and questions. Discussion is an important element of teaching vocabulary. There can be many ambiguities when doing this activity, and discussing the problems can really help students clarify the concepts and cement their learning.

References


## Maths: SFA Geometric Features of Polygons

<table>
<thead>
<tr>
<th>Type of polygon</th>
<th>At least 2 lines of symmetry</th>
<th>All sides equal length</th>
<th>All angles equal</th>
<th>Quadrilateral</th>
<th>Diagonals perpendicular</th>
<th>Self-intersecting</th>
<th>Opposite sides are parallel</th>
<th>All vertices point outward</th>
<th>All sides and interior angles are the same</th>
<th>Irregular polygon</th>
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</table>

* Inclusive definition – encompassing kites, parallelograms and rhombuses

**Flexibility:** For older students additional columns or rows could be added to investigate further features. They could also annotate any boxes with a ‘-’ and explain why that feature depends on certain examples. When finished, a further visual extension can be added to the grid by shading in the boxes with different colours e.g. green for a tick, red for a cross.
<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
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### Features

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