

A framework to define Imagination in STEM

Across literature on STEM practice and STEM education, definitions of "imagination" vary in a number of ways. The visual tool below presents a way to organize the characteristics of these definitions along three dimensions: **essence**, **ways of thinking**, and **context**. Using this framework, you can build definitions of imagination relevant to your work (see page 2).

| ESSENCE How imagination is characterized/ what it is | WAYS OF THINKING Cognitive, physical, social, and emotional processes involved in imagination | | CONTEXT Contexts towards which imagination is focused, or in which it emerges |
|---|--|--|---|
| Activity Ability Capacity Faculty Foresight Process Trait | Associating Creating Creativity Embodying Empathizing Feeling Forming concepts Futures thinking Hypothesizing Innovating Mental practice Moral thinking Navigating inconsistency Noticing | Organizing Playing Perspective taking Possibilities thinking Problem solving Prototyping Reflecting Representing Reproducing Self-identifying Speculating Transforming Understanding Visualizing Wondering | <u>Self and Social Contexts</u> Within the self In relation to others <u>Contexts of Presence and Absence</u> In reality To the senses Within experiences Related to what is known <u>Fictive or Hypothetical Contexts</u> In relation to fictitious possibilities Within narrative or storytelling In play scenarios <u>Temporal Contexts</u> Related to past or future |

COMMON DEFINITIONS OF IMAGINATION

| | | | |
|----------|-----|------------------------|---|
| Ability | TO | Visualize | In relation to what is present to the senses. |
| Activity | OF | Possibilities Thinking | In relation to past, present, future. |
| Capacity | FOR | Creativity | In relation to what is present in reality. |

Build your own definitions

Use the tool below to build definitions of imagination relevant to your work.

DIMENSIONS

Write in your favorite terms from page 1 or add in your own.

| ESSENCE | WAYS OF THINKING | CONTEXT |
|---------|------------------|---------|
| | | |

COMBINATIONS

Write in your own combination of terms (the top line is an example of a combination for reference).

| Example Combination | Ability | TO | Visualize | In relation to what is present in reality |
|---------------------|---------|----|-----------|---|
| Write your own | | | | |
| | | | | |
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