



Think Like a Scientist: Crosscutting Concepts Sentence Stem Posters

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Overview:

These posters are intended to help all students think like scientists. Each poster has multiple sentence stems to help students write and speak about big ideas in STEM. These are based on the crosscutting concepts found in the Next Generation Science Standards and allow students to think about the big picture and make connections in their learning. These sentence starters may be used in a variety of contexts, such as when students are making observations in the natural world or in lab settings, while viewing data, analyzing models, etc.

Big idea: Crosscutting concepts are scientific thinking tools that provide a framework for students to make connections to big ideas in STEM.

Materials:

- 7 Sentence Stem Posters

Materials Prep:

- Print and laminate (optional) the 7 posters and post them in the classroom

Procedure:

These posters can be used throughout the year to help students think, speak, and write like scientists and engineers. Each poster has sentence stems to help students discuss the crosscutting concepts found in the Next Generation Science Standards. They allow the student to not only make connections within the current unit of study, but also make connections throughout the different disciplines in science.

Standards:

NGSS

Crosscutting Concepts

Patterns

One pattern I observe is...

Based on the pattern I observe, I can conclude...

I would group _____ and _____ together because...

One similarity I observe between _____ and _____ is...

One difference I observe between _____ and _____ is...

Cause and Effect

I think that _____ caused
_____ because...

The relationship between
_____ and _____ is...

I think _____ and
_____ affect each other
over time by...

If we were to change _____,
I predict that...

Scale and Quantity

_____ is about the same size
as _____.

If _____ were twice as
large, I predict that...

If _____ were half the size,
I predict that...

As _____ increases within
the system, so does _____.

As _____ increases within
the system, _____ tends to
decrease.

Systems and Models

We observed a system that included the following key parts...

One way the key parts of this system work together is...

We used a model to represent _____ because...

The model represented _____ well because...

The model of _____ was limited because...

Energy and Matter

A type of energy I observe in this system is...

Some important examples of matter in this system are...

In the system, we observe energy flowing as...

In the system, we observe matter cycling as...

Structure and Function

The shape of _____ allows it to...

Some of the structures, or parts, I observe are...

The function of _____ is affected by its structure because...

The structures in this model show how...

Stability and Change

We observed a change in...

Over time, I would expect _____ to change because...

One place we observed stability was...

Over time, I think _____ would stay the same because...

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