

Need a STEM Activity?

A Quick Planning Guide

This list is designed to support quick STEM planning. Each section contains general activity ideas that can be adapted to fit the unit, materials, or theme you are currently teaching.

Use these ideas as starting points when planning lessons, centers, or short exploration periods. Teachers can easily modify them to connect with science topics, classroom themes, or cross-curricular projects.

This is not a comprehensive list. The ideas are meant to be flexible and adjusted as needed to fit the needs of your students.



Planning Tip:

Choose a STEM behavior first. Then adjust the activity to match your lesson topic or materials.



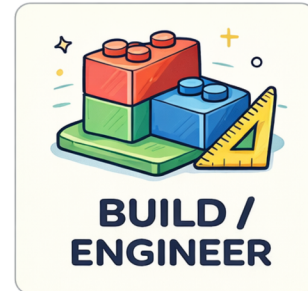
Need a STEM Activity?

Idea Bank for Planning

BUILD / ENGINEER

Students could:

- build a structure that supports weight
- create a bridge across a gap
- build the tallest free-standing tower possible
- design a structure that protects an object
- create a ramp or track for movement
- build something that rolls, slides, or spins
- construct something using limited materials
- build something that balances
- improve a structure after testing it
- design a structure that solves a simple problem
- build something that connects multiple pieces
- construct a model of something from real life



DESIGN

Students could:

- sketch an invention
- design a tool for the classroom
- create a labeled diagram or blueprint
- design a structure before building it
- design a pattern or repeating structure
- redesign an everyday object to make it better
- draw a plan for something they want to build
- design a simple machine or mechanism
- create a map or layout
- design packaging for a fragile object
- sketch a solution to a problem
- plan how materials will be used before building



Need a STEM Activity?

Idea Bank for Planning

EXPERIMENT

Students could:

- test how changing one variable affects results
- compare two materials or designs
- test predictions and record observations
- repeat a test to check results
- explore what happens when conditions change
- test which structure is strongest
- investigate what happens when weight changes
- experiment with balance and stability
- test how shape affects strength
- observe how materials react to pressure or force
- test different ways to solve the same problem
- compare results and discuss what worked best



INVENT

Students could:

- invent something that solves a problem
- create a tool for a daily task
- design a new game or challenge
- invent something that helps organize materials
- combine objects to create something new
- invent a structure for a specific purpose
- design something to help carry or move objects
- invent something imaginative or futuristic
- create a new use for a common object
- invent something that improves an existing design
- design something that helps people work together
- invent something for a specific environment



Need a STEM Activity?

Idea Bank for Planning

EXPLORE

Students could:

- investigate how materials behave
- try different ways to use the same object
- explore patterns, shapes, or structures
- observe how objects interact
- test the limits of different materials
- experiment with stacking, balancing, or connecting
- explore how shapes fit together
- test how objects move across surfaces
- explore different ways to connect materials
- observe how size or shape affects structures
- explore how materials respond to force or motion
- investigate what materials can and cannot do



WORK WITH DATA

Students could:

- measure and record results
- collect data during an experiment
- create charts or graphs
- survey classmates and organize results
- compare results and look for patterns
- count and record observations
- measure height, length, or distance
- record how many attempts it takes to solve a problem
- track results across multiple trials
- organize information into tables
- compare measurements between groups
- display information visually



Need a STEM Activity?

Lesson Examples

How to Use Lists:

Start with your unit theme. Use list to find STEM activities. Adjust the activities to match your lesson topic, materials, and grade level.

Example 1 — Plants

Build / Engineer

Create a structure that supports a plant.

Design

Draw a plan for a small garden.

Experiment

Test how different amounts of water affect plant growth.

Invent

Create a tool that helps water plants more easily.

Explore

Investigate how roots grow through soil.

Work With Data

Measure and record plant growth over time.

Example 2 — Cities

Build / Engineer

Construct a model bridge or building.

Design

Design a park or city block.

Experiment

Test which building shapes are strongest.

Invent

Create something that helps people travel through the city.

Explore

Investigate how different structures balance.

Work With Data

Survey classmates about transportation choices.

Example 3 — Weather

Build / Engineer

Build a structure that protects something from wind.

Design

Design a weather station.

Experiment

Test how wind affects different structures.

Invent

Create a tool that measures rainfall.

Explore

Observe clouds and weather patterns.

Work With Data

Record daily temperatures and graph results.