

## Introducing STEM and STEM Starters

- What is STEM and what should it look like in the classroom?
  - STEM is the idea that Science, Technology, Engineering, and Math can be interwoven and taught simultaneously.
  - If taught correctly, these different areas of instruction support one another and fit together like puzzle pieces.
- Don't be fooled by an old science kit with a "STEM" sticker stuck on top.
  - STEM is not a plastic model or building blocks with a pre-determined outcome.
    - It can *include* one of those things, but STEM is more than just a new name for science.
  - STEM is not about following step-by-step instructions (although some instructions may be necessary!).
    - It is about the process of discovery.
    - It is about taking risks, recording results, making changes, and trying again.
    - It is about brainstorming, predicting, designing, collaborating, evaluating, and sharing.
- We want to encourage children to take risks with their learning and not be afraid of making mistakes.
  - A perfect way to introduce this way of learning is by using a STEM Starters kit.
- With a STEM Starters kit, you are given some essential (or specialized) pieces and a task to be completed (e.g., build a vehicle powered by a balloon, build a hydraulic-powered device); the rest of the designing and engineering is limited only by a child's imagination and creativity.
  - The purpose of these kits is in the name: they are to help children get *started* with a STEM activity. The first step of many!
- With these kits, children are not following step-by-step instructions.
  - There is no "wrong" or "right" way to build their creations, but they *will* discover that certain designs are more effective than others.
- **In order to build a successful device, additional materials will need to be made available.**
  - This is where various "everyday" items can be introduced as potential solutions and tested for effectiveness.
  - Paper is too thin? Try cardboard. Too heavy? Maybe try folding the paper instead. Will that work?
- Devices will need to be rebuilt and modified multiple times, and there will always be the potential to make something better.
  - Don't be afraid to take a step back and allow children to share with one another what works, what doesn't work, and what needs to be improved.
- As a teacher or a parent, be available to answer questions and provide feedback, but let the children drive the activity.