

Life Science; such as biology, medicine, and ecology, that study the structural and functional organization of living organisms and their relationships to each other and the environment.

□ Physical Science; such as physics, chemistry, and astronomy, that study the nature and properties of energy and nonliving matter.

□ Earth Science; such as its history, climate, meteorology, or the solar system. Thinking about long-time scales and unseen forces. Active exploration and observations of reality. Hands-on exploration of materials allows children to investigate properties of objects and begin to develop understanding of position, motion, weight, and force.

Scientific Method

Question

Pose open-ended questions to children for them that allow them to critically think about the project they are doing.

Which ramp will the cars go down fastest?



Hypothesis

Record some of the children's guesses that attempt to answer the specific question.

We predict the cars will go fastest down the steeper ramp.

Utilize their answers to further thought process; *which ramp is longer, higher, etc?*

Ask additional open-ended questions depending on the children's understanding and ability.

These hypothesis or guesses increase children's understanding and direction of what they may investigate in the activity.

Experiment

Through play-based activities the children can "test" their hypothesis.

Set-up appealing and intentional experiments.

- *What is your goal for children with this activity?*
- *Is the activity based on interest or needs of your children?*

- *Will it answer the initial questions and test the hypothesis?*

Observations and Conclusion

After experimentation, help the children draw upon their observations during the experience to create logical answers to their original questions.

The shorter ramp went faster.

Record the children's observations and conclusions after they have had a chance to thoroughly explore the materials and activity. Re-ask the initial question used for the hypothesis, compare results.

Allow children to build on, expand, or change the materials/activities based on their interest and goals.

Goals for Early Childhood Science

- Provide an environment that supports active discovery.
- Promote the development of fundamental problem solving skills.
- Promote awareness of scientific and mathematical concepts.
- Develop a knowledgeable base of the basic scientific principles and laws.
- Raise comfort and confidence levels with science through hands on exploration.

