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Science for Young Children

Keys to Successful Science Inquiry Experiences for Young Children

- ⇒ Encourage exploration.
- ⇒ Let them decide what to try.
- ⇒ Ask questions before giving answers.
- ⇒ Let them get their hands dirty.
- ⇒ Remember that trial and error is not failure.
- ⇒ Listen to their thoughts and ideas without judging.

HANDS-ON

Young children learn best when they are able to be involved in a process and the more of their senses they can use the better. They don't want to watch a demonstration or hear you tell about it. More importantly, they won't learn as much as if they are able to look at the options, make a choice, try it to see what happens and then figure out what to try next. This process helps them to build self-confidence and to develop critical thinking skills.

IT'S THE PROCESS THAT'S IMPORTANT

Many things in life focus on the final product, but in science education it's the process that's important especially for young children. Science experiences are helping them learn how to learn, how to solve problems, how to evaluate potential solutions, how to decide what options are better than others and finally how to use what they learn in other parts of their lives.

A big aspect, is learning that just because something didn't work the way you thought it would it doesn't mean you failed. Even if you find something that works in the first trial, you won't know that it's the only thing or even the best thing, unless you try other solutions and see how they work.

Finally, once learned, this process can be used in many different life situations.

Preschool Version of the Scientific Process

From a preschool perspective, the scientific process can be summarized into a simpler four step process.

1) **Observation**: What's happening; what do you see, hear, feel, etc.?
2) **Predicting**: Guess/predict what will happen next; what will happen if; how could we get it to __?
3) **Experimenting**: Children investigate their predictions to see what really happens and why?
4) **Interpreting:** Draw conclusions; would it happen the same in another setting; what should happen next?

These explorations lay the foundation for understanding more complex science concepts in the future.

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WHY? HOW? WHAT?

The questions you ask can help direct a child's learning and encourages them to think on their own.

I wonder why that happens?
What do you think would happen if _____?
What else might work instead?
I wonder if we could _____?
What else should we try?
Can you think of anything else that works like that?

Role of Adults

Emphasizing the importance of real world hands-on experiences for young children doesn't minimize the very important role of adults. Adults (parents, childcare providers, preschool teachers) are needed to:

- Create opportunities for kids to explore;
- Arrange and maintain a safe environment;
- Secure and manage materials;
- Encourage children to get involved; and

Life Skills

While involved in science experiences children learn three very important life skills:

» Critical Thinking;

» Decision Making; and

» Learning to Learn.

Regardless of where they go or what career they choose to pursue these are skills that will lead them to success.

Science is . . . .

Inclusive: It's part of our daily lives: all day, every day, everywhere we go. Our personal lives are real world contexts for learning science and understanding the impact of science on our lives.

Across subjects: it's not isolated from everything else in our lives — it crosses into all subjects. It can be found in history, geography, philosophy, dance, music, shooting sport, art and so much more.

Developing literacy skills: Literacy skills are integral to knowing and doing science. Reading, writing, and speaking are all essential to comprehending & communicating issues and ideas.

Developing math skills: Math is integral to doing science. Sorting & classifying, estimating, counting, measuring, graphing, collecting data and analyzing skills are frequently used.

Develops general and technical skills: It requires using technical skills and safety skills.

All around us. Science activities give young children a chance to explore their world, gain new knowledge and learn to understand the process of exploration.

Young children are naturally curious and they are interested in learning about the world around them and how the different parts of the world interact.