



The Halton Resource Connection

Toddler Teachers Learning More

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Supporting Quality Care and Learning for all Children and Youth

Key components of Science-Linking Them to Toddlers

Ensuring science is included in the child care curriculum plan has historically created a bit of panic for many early childhood educators. What can I do? What should I put out? What experiments need to be done? I don't know much about science. These questions and concerns are often on the tip of the ECE's tongue as staff teams develop the "science area".

Take this challenging perspective and add in the toddler age range and the panic elevates slightly.

Not only are some staff unsure of what to do in the science area toddler teachers also have to consider the developmental abilities of toddlers.

Language development, sensory learning and social development are only three of the basic rudiments of toddler growth and development. Ensuring that toddlers have the opportunity to engage in science activities may seem like an unrealistic expectation for some of our youngest learners—but it's not!

Toddlers are explorers, investigators, and experimenters. In essence they are scientists already due to the nature of childhood. Since toddlers are already scientists all that needs to happen is ensure teachers are providing experiences to encourage the six basic components of preschool science.

They include:

- Observing
- Classifying
- Predicting
- Drawing conclusions
- Communicating ideas
- Experimenting



The following pages outline each of the six components of preschool science as well as a listing of activity ideas for each of the components.

“ Opportunities to use and interconnect all six processes allow preschoolers to develop into competent ‘scientists’ .”

Neill, 2009

Observing

Toddlers are always observing their environment. They watch and learn from what they see. They take in new information and store it. They also consider how it is similar to what they know. While toddlers are developing their language it is up to the educator to take the time to translate what the child is observing into language they can understand. In this photo the teacher might state to the child, “That is a bird. It can fly.” or “The bird is talking with a squawking sound.” The sense of sound and sight have been used in this observation. Observation through the other senses could also be used. What else could be done?



Classifying

Children sort items according to their own system. They look at things and notice the similarities and differences and group them accordingly. During play the teacher needs to be an observer to better understand the categories a child may be using to classify the materials they are manipulating. The teacher’s role is to label the classifications a child creates so there is a linkage between the classification and language. For example, a toddler takes all the spoons out of the dishes bin and makes a pile. The teacher states, “You have made a pile of spoons.” This helps the child understand the commonality amongst the items that they have piled together.

When we think of the picture above the teacher stated, “That is a bird.”. The teacher needs to watch for other opportunities to scaffold that experience by watching for other birds, pointing them out and labeling them for the child. This helps develop some common characteristics for the child to use in other classification experiences.

Experimenting

The toddler in the picture below is trying something, or testing an idea, to see if it works. The child is testing their idea, their hypothesis or their prediction. This child could be wondering: Will the nut fit in the container?; Will this second nut fit in the container?; What will happen if I add leaves?



As with the scientific components the child is using, the educator needs to observe the child, read their cues and anticipate the kinds of questions they may be wondering. The teacher can then enhance the experience by labeling and linking language to the child’s action.

The trial and error experience seems to be an unending task of toddlers. They are always trying things to see what the effect will be—toddlers are ‘scientists’!

Predicting

Prediction includes skills which are still emerging in toddlers– language and past experience. If one is able to predict they must be able to describe what they think will happen and it is based on past experience. Since toddlers are still building on their language skills and gaining experience the educator must support the child through the predict by reminding them of some past experience.

If we consider the picture with the child and the bird we can use that past experience to link to a new experience. If a child sees a bird in the puddle the teacher might state to the toddler, “I think that bird is going to fly away. He has wings like the bird on the beach.”

Predicting can also take place through the reading and re-reading of a story book. The teacher encourages toddlers to predict what will happen next. The child may demonstrate through body language, sounds, facial expressions and beginning language.

Drawing Conclusions

Once a prediction is made and evidence is gathered a person is able to draw a conclusion. This conclusion could affirm a prediction or it could challenge a prediction.

This component of science cannot be independently achieved by toddlers. Once again the educator is needed to support this. Teachers will need to talk with toddlers to help link predictions and conclusions.



Communicating Ideas

Sharing of ideas, discoveries and observations can be achieved in a number of ways, which may include drawing, talking, demonstrating and gesturing. Toddlers have a multitude of ways in which they communicate including sounds, body language, facial expressions, drawing, gesturing and words. Many of these types of communication require interpretation from the educator. This interpretation is the way in which toddlers link their “communication” to spoken language.

In this component of science, a toddlers communication of ideas must be strongly supported by the educator. Educators are the conduits of the toddlers learning and support them in making their communication and learning visible.

Understanding the developmental milestones of toddlers will assist educators in successfully reading and understanding the communication of toddlers.

Ideas to Use with Toddlers-*Educators must be involved to support the learning!***Observing**

- Educators take children for short walks around playground/neighbouring park and points out natural things. Children can be encouraged to explore items through their senses. Special items can be

Classification

- Provide groupings of natural objects for the children to explore, such as sticks, stones, leaves, pine cones
- Staff talk with children about commonalities in natural things in their world (ie birds, trees)

Experimenting

- Educators engage toddlers and try new things, talk to the children about what is happening. One example could include: allowing toddlers to pour water into a pile of dirt and talk about what happened to the water and the dirt. Consider using color blending activities and comparing hot/cold as additional experiments.

Predicting

- The educator must state the prediction based on previous experiences of the toddler. An example could sound like, “Kamil, I think the bird on the grass will fly away when we get close. The other bird flew away when we walked by.” When you go near the bird talk about what actually happened.

Drawing Conclusions

- The educator needs to verbalize the cues of the child. For example, the teacher notices that a toddler places a small block in a container through a hole cut in the lid. The educator states, “You placed the small block in the hole. It fits.”

Communicating Ideas

- Provide materials for the toddlers to represent what they have seen (ie paper/paint, playdough, markers/paper) Place the materials near the materials/environments that represent science experiences. This could include an easel outside near the flowers you just planted or markers and paper near the basket of pinecones.

References and Adaptation in Part from:

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