Pre-School Ball Run!

Play Activity Overview

Creating a ball run is a great way to have fun exploring the properties of mass, force and motion at home or in a classroom! Use cardboard bases and track tubes to make a ball run and test your ball run with balls of various sizes, weights and textures. Make the course even more exciting by creating a target for your ball at the end of your track—set up some blocks to knock down, try to get your ball to fall into a bucket or roll through another tube!

Engaging Early Learners in Science Exploration

Young children are very similar to scientists in that they are always exploring, observing and experimenting to try and make sense of their world. Given their natural interest in exploring materials, organisms and events, meaningful science activities for young children are based on the processes of inquiry. With adult guidance, young children can develop their scientific inquiry skills to learn new ways to ask questions and find answers, as well as new ways to observe and study their world. Scientific inquiry can be nurtured through supporting children as they engage in:

- Experiencing and wondering
- Observing and describing
- Questioning and investigating
- Explaining and predicting

There are a variety of methods adults can use to further children's scientific inquiry and take them more deeply into their explorations:

- Expand on children's interests
- Ask open-ended questions
- Talk with children about what they are seeing/doing
- Help children represent their ideas through drawings
- Help chidren identify and recognize patterns
- Help children collect and record data
- Read age appropriate books with children related to what they are exploring
- Provide children with scientific tools that are age appropriate

Illinois State Goals

Science State Goal 12: Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences.

> **Learning Standard D:** Know and apply concepts that describe force and motion and the principles that explain them.

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Materials

Cardboard bases	Tube connected vertically to a square base. Holes will need to be cut into the tube to hold the track tubes.
Cardboard track tubes	Smaller tubes cut in half lengthwise will be used as bridges and connectors between tubes
Balls	Balls of various sizes, weight and textures
Foam pieces	Foam pieces on the cardboard bases can be used to hold the track tubes in place to prevent slipping
Targets	Coffee cans, blocks or other manipulatives can be used to set up a "target" at the end of the ball run

Play Activity Set-Up

1. Set up a small sample Ball Run to provide children with an example of how to use the materials.
2. Have all materials available for children to create their own ball run.

Play Activity

1. Invite children to test the sample ball run or create a ball run of their own.
2. Show children the available materials and if needed, provide them with assistance to set up the tubes.
3. Children will experiement with getting the ball from point A to point B.
4. Ask children open-ended questions about their ball run—encouraging them to test different balls and ball run configurations.
    - Why is the ball going so fast (or slow)?
    - How can you make your ball run longer?
    - Which ball will go the faster…the tennis ball or the golf ball? Why?
    - What is your ball doing?
5. Invite children to use tin cans, blocks and other manipulatives to create 'targets' at the end of their ball run to further their understanding of cause & effect.