



Bucks County Children's Museum
Visitation Guide for Educators
PreK-2nd Grade

Shhh...Don't Tell the Kids They Are Learning!

Welcome Educators! It is well known that the first years of life are essential to future learning. Children's museums are leading a movement that combines specific learning objectives with play in informal learning environments that are developmentally appropriate for infants, toddlers and children. Through thoughtfully designed spaces with universal design in mind, The Bucks County Children's Museum provides an opportunity for children to explore, discover and learn in a safe environment and at their own unique pace. Opened in 2011, our 9,500 square foot museum includes 5 unique exhibit areas designed by a team of professional educators from across the region with curriculum standards in mind. ***We encourage you to encourage your students to PLAY...but don't let them know that we have snuck in some learning!***

1/2 day (90 minute) Field Trip Sample Agenda

- Arrival at Museum
- Museum Orientation Full Group – Assessing prior experiences
- Small Group Break Out Lesson (20 minutes per group)
- Free Play!
- Visit Reflection Full Group – Assess experience & learning
- Dismissal

Full Day Field Trip Sample Agenda

- Arrival at Museum
- Museum Orientation Full Group – Assessing prior experiences
- Small Group Break Out Lesson (20 minutes per group)
- Free Play!
- Visit Reflection Full Group – Assess experience & learning
- Lunch/Ride on New Hope Ivyland Railroad
- Depart from Museum

Examples of Educational Standards in Exhibits

- 1. The General Store and Post Office encourages kids to explore basic math and writing concepts including coin recognition, weight, categorizing and sorting as well as letter and number recognition.**

Challenge Questions for Kids

Encourage your child to investigate through pretend play:

1. What coin is this and how much is it worth?
2. How much does this bag weigh?
3. Look at the address on the postcard. Can you deliver the mail to the right box?

What are Kids Learning?

Various PA Pre-K-2nd Grade Academic Standards addressed in the General Store and Post Office include:

1.1.PK.B: Associate some letters with their names and sounds.

2.3.PK.A: Identify characteristics that are measurable.

1.1.K.B: Use association strategies to identify letters.

2.3.K.B: Use concrete objects as non-standard units to estimate and measure.

2.1.K.B: Represent equivalent forms of the same number through the use of pictures and concrete objects (including penny, nickel, and dime), up to 20.

1.1.1.B: Demonstrate knowledge of letter sound correspondence (alphabetic principle) to decode and encode words.

2.1.1.B: Represent equivalent forms of the same number through the use of pictures and concrete objects (including penny, nickel, dime, and quarter), up to 100.

2.3.1.F: Compare concrete objects to determine greater or lesser attributes (weight).

2.2.2.A: Develop fluency in the use of basic facts for addition and subtraction.

2. Factory Works encourages children to explore basic science and physics concepts by using variables in the construction and testing of a racecar and a ball drop.

Challenge Questions for Kids

Encourage your children to test variables through experimentation:

1. Will a taller car move faster than a smaller car?
2. Will a heavier car move faster than a lighter car?
3. Which track is faster?
4. What's the longest path the ball can take to get to the bottom?
5. Why do the tracks need to be tilted downward?

What are Kids Learning?

Various PA Pre-K-2nd Grade Academic Standards addressed in the Factory Works include:

Unifying Theme: Plan and conduct a simple investigation and understand that different questions require different kinds of investigations.

2.7.PK.D: List or graph the possible results of an experiment, with adult assistance.

3.2.PK.A1: Sort and describe objects according to size, shape, color, and texture.

3.2.PK.B1: Explore and describe motion of toys and objects.

3.2.K.B7: Use data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and compare them with their current scientific knowledge.

3.2.1.B1: Demonstrate various types of motion. Observe and describe how pushes and pulls change the motion of objects.

2.7.1.E: Answer questions about predictions and actual outcomes based on data.

3. The Artifact Dig encourages children to explore and discover local history through a tactile experience.

Challenge Questions for Kids

Encourage your child to identify what they discover:

1. What is the state fossil?
2. Who founded Bucks County?
3. How was the conch shell used on the Delaware Canal?

What are Kids Learning?

Various PA Pre-K-2nd Grade Academic Standards addressed in the Artifact Dig include:

3.3.PK.A7: Ask questions about objects, organisms, and events.

8.2.K.B: Examine photographs of **documents, artifacts**, and places unique to Pennsylvania.

3.2.K.B7: Use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information.

8.1.1.A: Demonstrate an understanding of chronology.

8.1.2.B: Identify documents relating to an event.

4. Airways and Shadow Room Exhibits offer a hands-on opportunity for learners to discover the power of wind, air pressure and light.

Challenge Questions for Kids

1. What is wind?
2. How does wind create energy?
3. What is air pressure?
4. Why doesn't the scarf move through the tubes if the door is left open?
5. What is happening to the air when you move the diverter?
6. On the air table, what is keeping the ball in the air?
7. What is force?
8. On the air table, why does the ball go higher if you cover two of the pipes?
9. In the shadow room, how can you see the light energy?
10. How can you block the light energy from reaching the wall?

What Are Kids Learning?

Various PA Pre-K-2nd Grade Academic Standards addressed in the Airways and Shadow Room Exhibits:

Unifying Theme: Plan and conduct a simple investigation and understand that different questions require different kinds of investigations.

3.2.PK.B1: Explore and describe motion of toys and objects.

3.2.K.B.6: Recognize that light from the sun is an important source of energy.

3.2.1.B1: Demonstrate various types of motion. Observe and describe how pushes and pulls change the motion of objects.

8.3.1.A: Identify Americans who played a significant role in American history.

1.6.1.A: Listen actively and respond to others in small and large group situations with appropriate questions and ideas

3.2.2.B2: Explore and describe how different forms of energy cause changes. (e.g., sunlight, heat, wind)

5. Waterways offers learners the virtual experience of operating a lock on the historic Delaware Canal in order to gain understanding of the function of the canal as well as the importance of waterways in Pennsylvania.

Challenge Questions for Kids

1. What is a canal lock?
2. What was transported down the Delaware Canal?
3. How do the gates help raise and lower the water level in a lock?
4. What is a wicket?
5. What important job does a mule have?
6. What is a centenary arch?

What Are Kids Learning?

Various PA Pre-K-2nd Grade Academic Standards addressed in the Waterways Exhibit:

4.2.PK.A: Identify various types of moving water in Pennsylvania.

8.2.K.B: Examine photographs of **documents, artifacts**, and places unique to Pennsylvania.

7.4.K.A: Identify local bodies of water and landforms to gain an understanding of their impact on the local community.

7.2.K.B: Identify land and water forms.

7.2.1.A: Identify physical characteristics in the community and region.

7.4.1.A: Describe how lakes, rivers, and streams impact people.

7.2.1.A: Identify physical characteristics in the community and region.

3.2.3.B7: Plan and conduct a simple investigation and understand that different questions require different kinds of investigations.

1.6.1.A: Listen actively and respond to others in small and large group situations with appropriate questions and ideas

1.9.K.A: Gain information using media and technology resources with adult assistance.

1.9.2.A: Use media and technology resources for directed and independent learning activities.

7. Built out of recycled and repurposed materials, Bucks County Country is a whimsical play environment that reinforces the importance of recycling and conservation.

Challenge Questions for Kids

1. What is recycling?
2. What kinds of things can be recycled?
3. Why is there trash in the river?
4. Why can't both the fish and trash be in the river at the same time?
5. Why is it important for the river to be clean?
6. Can we help to clean the river?
7. How many inches long is the fish you caught?

What Are Kids Learning?

Various PA Pre-K-2nd Grade Academic Standards addressed in the Bucks County Country:

- 4.3.PK.B:** Identify natural resources available to people in their daily life.
- 4.1.PK.A:** Identify living and non-living things in the immediate and surrounding environment.
- 4.5.PK.C:** Identify ways people pollute the environment.
- 2.3.PK.F:** Compare concrete objects to estimate and verify measurements of length.
- 4.3.K.B:** Recognize the importance of conserving natural resources.
- 4.1.K.A:** Identify the similarities and differences of living and non-living things within the immediate and surrounding environment.
- 4.5.K.C:** identify different types of pollution and their sources.
- 4.5.K.D:** Identify water and practice ways to reduce, reuse and recycle.
- 2.3.K.A:** Identify similarities and differences in measurement
- 4.3.1A:** Identify some renewable resources used in the community.
- 4.5.1.C:** Describe how pollution affects the health of a habitat.
- 4.3.2.B:** Identify products and buy products derived from renewable resources.
- 4.5.2.C:** Identify how people can reduce pollution.
- 4.5.2.D:** describe how people can help the environment by reducing reusing and recycling.
- 2.3.2.F:** Estimate and verify measure of length

Sample Field Trip Lesson - Fossil Search!

Fossil Lesson Plan

Goal: Use basic coordinates to find fossils.

Terms:

- Paleontologist-Someone who studies fossils
- Fossil- The remains of a living thing from the past
- Grid- A mapping system using coordinates

Assess Prior Knowledge/Set Goal

Welcome students to museum **“Today you are going to search for fossils and place them on a grid”**

Ask **“Who can tell me what a fossil is?”** Define fossil and that fossils are usually hidden in rocks or sand for millions of years. Talk about dinosaurs and that plants and shells, can be fossils too.

Activity

“Today you are all going to be paleontologists”. Define Paleontologists. Tell students that paleontologists spend much of their time outside searching for fossils and they use a grid to keep track of where they find fossils. Using grid on board, show students how coordinates are used by using examples ie – what are the coordinates for the butterfly? What is located at E-3, etc. When students have an understanding of how to use coordinates, move to next step.

“Now that you all know how to use a grid, you need tools” Ask students to open tool kits and explain what each tool is used for. Tell students that paleontologists don't use their hands to dig for fear of disturbing fossil. Explain how they must work in teams and take turns to find fossils. When they find a fossil, they locate the fossil's card and lay the card on the coordinate map where the fossil was located. Students have 10 minutes to complete this activity.

Assess Learning

After 10 minutes, ask students to put down tools. Ask who would like to share what they found by identifying the coordinate where it was found. Discuss fossil facts and display large fossil card on board. Complete all 10 fossil coordinates. Congratulate students on job well done.

Restate goal: **Today you learned how to use coordinates on a grid to locate fossils. What is a Paleontologist? What is a fossil? What is a grid?**

Ask students to carefully cover fossils and collect tools!