

Thomas & Friends™: Explore the Rails

Programming and Group Guide

Pre-Kindergarten through 2nd grade



Updated 4/15/14

Introduction

Using our Programs and Materials

This section of the manual includes special gallery and museum programming for *Thomas and Friends*[™]: *Explore the Rails* as well as before, during and after visit suggestions for school group engagement and a recommended book list. “Gallery Program” ideas are meant to enhance the exhibit experience and are not designed to stand alone within the exhibit without staffing or volunteers. Additionally, “Classroom Activity” ideas are also intended to be facilitated as well as conducted in another part of the museum, not within the *Thomas and Friends*[™]: *Explore the Rails* gallery itself.

Facilitated Gallery Programs

Battery Operated Thomas Trains

A parade of trains, controlled by the visitors, takes center stage during this special program. Trains and tracks are set out for children to create their own routes and their own stories with these special Thomas characters.

Objectives

- Move trains forward and from one point to another
- Collaborate with peers to navigate the trains from one location to another
- Negotiate with others to take turns and share materials
- Use problem solving skills to change out tracks and create new routes

Materials Needed:

- Container with battery operated Thomas trains (provided)
- Tracks and scenery pieces (provided)
- Replacement batteries
- Large table approximately 10' by 12' or open floor space of the same size (may want to consider taping of a section for clear boundaries)

Implementation:

- Set up a small part of the track and scenery to show visitors the activity, leaving the rest of the track for them to put together.
- As children set up the track and navigate the trains, set up challenges for them to do as they play.
 - Find the shortest route to a specific destination on the track
 - Attach additional train cars and make a delivery to another place along the track
 - Use additional tracks to create new routes; control levers on the tracks to change directions of the trains
 - Predict where on the track you would end up if you go forward for 10 seconds (change seconds according to the age of the child)
 - And any other challenges to stimulate creative thinking

Ramp it Up!

Visitors can explore ramps, gravity, force and motion as they race and roll balls down a variety of ramps. This is a good enhancing activity for slightly older children.

Objectives

- Use senses to explore materials and tools to investigate the environment
- Exercise creativity by visualizing and executing various ramps to test and try out
- Use problem solving skills to determine slower/faster ramps and ball sizes
- Ask questions and seek answers through active exploration
- Negotiate with others to share materials and collaborate to complete tasks

Materials Needed

- Balls in a variety of types and sizes (1.5" to 4") **toy vehicles can be used as an alternative*
- Ramp materials of various lengths (wood, cardboard, gutters, tubes)
- Stopwatches (10)
- Structures to mount ramps (tables, chairs, crates, saw horses, etc.)

Implementation

- Set up a few ramps around the area you are using. It is good to set this activity up in an area that has some walls to contain the balls. Have available a few baskets of extra ramp building materials for children to build or set up their own ramps. House the balls in several baskets placed throughout the ramp area.
- Invite visitors to come and build ramps to race balls down.
- While they are exploring, encourage visitors to experiment with height of the ramps and test out which balls move the fastest. Ask them what their prediction is prior to giving it a try.
- You may choose to conduct races where you time the balls as they go down the ramps.

Train Challenges

Visitors can participate in various mathematical challenges instigated by Museum staff including counting trains, measuring trains, and sorting and ordering the props.

Objectives

- Use simple mathematical strategies to search for answers
- Observe objects, materials and events
- Record observations /discoveries in one or more ways. Share their findings with their peers in a positive atmosphere

Materials Needed

- Hand tally counters
- Rulers and tape measures
- Basket of miscellaneous materials for measuring (shoes, paper strips, blocks, Duplos...)
- Cart or small table
- Clipboards and paper
- Large/chart paper – one for each challenge
- Writing utensils

Implementation

- Arrange the materials on a cart or table inside the gallery. When visitors approach or walk nearby, ask children to participate in a project that you need help with, measuring Thomas, counting trains, or sorting/ordering luggage.
- Measuring Thomas:
 - Hand out a ruler, tape measure or other item to use as a tool for measurement. Task them with measuring Thomas the Tank Engine using an appropriate method for what tool was chosen. When they come back have them record their findings on a large piece of paper kept at the cart. See if they want to try it again with another. Ask them which methods worked better.
- Counting Trains:
 - Hand out a tally counter and ask children to go count all the Thomas trains they can find in the gallery. When they come back to report, have them record their number found on the chart. Then ask them to find other characters and count them. Compare the numbers with the children when they come back to report.
- Sorting Luggage:
 - Ask children to take all the luggage from the passenger area, and arrange it from biggest to smallest. Then ask them to sort the luggage into stacks by using different characteristics such as size and color. Record on chart what they discovered.

Facilitated Classroom Activities

Big Box Locomotive

Imaginations soar as visitors use paint and collage materials to help turn big boxes into a locomotive and immerse themselves in the world of trains. **This program is messy and should be done in an art center or an area that allows for it.*

Objectives

- Experience an open-ended activity with high success in use of materials
- Use their imaginations in designing their own train
- Role play the work of train engineers/conductors and the role of train passengers
- Feel empowered in creating something new from recycled materials

Materials Needed

- 5-7 large boxes from an appliance store (use as many boxes as space allows)
- Smaller boxes to add features inside the train cars
- Tempera paint in 3 colors: red, blue and green
- Paint brushes, smocks and paint containers
- Collage materials: pom poms, foam shapes with adhesive backing, feathers, colored tapes, etc.
- Glue sticks and bowls
- Cardboard tubes and circular discs
- Box cutter and duct tape (for set up only)
- Roll of butcher paper
- Markers, scissors and construction paper
- Stools, chairs or a bench

Implementation

- Prior set up- use box cutter to cut windows and doors in boxes. Use the biggest box for your engine. Make smooth edges on the boxes using duct tape to line the windows and doors. Make the boxes look connected together by using cardboard tubes. Use the cardboard circular discs to attach wheels. You can use smaller boxes to make a control panel inside the engine.
- For the first few days of the program, set out the paints and the paint materials for children to paint the trains however they like. Cover the floor around the boxes with butcher paper.
- After a few days or when the trains are pretty well covered with paint, replace the paint with glue sticks and a variety of collage materials.
- When the trains look pretty full, remove the collage materials and use the trains for dramatic play. Add a small bench, stools or chairs to the passenger car. Provide paper, markers and scissors for children to make money and tickets.

*Special Note: The whole program can take a week, but it may be extended if it fits in with your programming.

Making Tracks: Painting with Trains

Visitors use the wheels of trains to make tracks on paper. They can make their own creations to take home and also join in a collaborative project rolling trains down ramps onto a large floor mural. **This program will be messy and should be done in an art center or an area that allows for it.*

Objectives

- Take a risk by participating in a program that uses familiar materials in a new, messy way
- Develop fine motor skills by grasping trains and controlling movement
- Share tools, take turns and cooperate with peers to make a variety of tracks
- Explore cause and effect relationships

Materials Needed

- Toy trains and vehicles in a variety of sizes and types
- Construction paper
- Paint smocks
- Butcher Paper and duct tape
- Ramps (that can get paint on them)
- Tempera paint – 3 or more colors
- Trays and large flat paint containers

Set up Instructions

- Prior set up- you may choose to wrap block ramps with butcher paper and cover tables with plastic table covers.
- On an area of the floor, lay down butcher paper and tape it down creating a large work area maybe 4' by 10'. Put the ramps on both ends of the paper. Place 2 trays or large flat containers with paint next to the ramps. Set a variety of trains and vehicles on the paper for children to roll in the paint and send down the ramps onto the paper.
- Set out trays with a variety of trains/vehicles and a large flat container with 3 colors of paint on each table. Children can take a sheet of construction paper, roll the trains in paint and then roll them on their paper.
- Ask children what they are noticing about the track marks.

Geyser Rocket Car

In this program, visitors can experiment with physics and motion while creating their own rocket car. This program is designed for students ages 6-8. *This program will be messy and should be done in an art center or an area that allows for it.

Objectives:

- Explore Newton's Third Law of Motion: For every action, there is an equal and opposite reaction
- Use alternative, out of the box thinking to find ways to make the cars go longer distances
- Share their findings with their peers in a positive atmosphere

Materials Needed

- Soda Geyser Car (13"x6"x7")
 - 4 wheels
 - 2 axles
 - 2 Velcro straps
 - 1 plastic chassis
 - 1 nose cone
 - 1 flag pole
- 1 Fizz Injector Tube with red "trigger pin"
- 1 Air Blaster Cork with inflation needle
- 1 clear, 2-liter plastic bottle
- 1 Mentos candy roll

Implementation

- Follow the directions on the following link for activity set up and implementation <http://www.stevespanglerscience.com/geyser-rocket-car.html>
- While the children are working, ask questions such as
 - How do you think the car is able to move forward?
 - Is there a way to make the car travel longer distances?
- Repeat the experiment several times to compare results. You may choose to record findings on a piece of chart paper.

School and Group Guide

Before Your Visit

Try some of these activities to prepare the children for what they will experience when they visit *Thomas and Friends™: Explore the Rails*.

1. Discuss train careers in your classroom. Investigate what train engineers do. Invite someone from your local railroad company to visit your classroom.
2. Create a Web of Knowledge filled with all the information children currently know about trains. As children gain more facts, add them to the web.
3. Read several of your favorite Thomas stories. Discuss the personalities of the trains and choose class favorites. Have children draw a picture of their favorite train, telling why they like that character. Make a graph of the moods of all the trains. Are most trains happy, crabby, angry, sad, surprised or silly?
4. Explore the way things move down slopes. Build some ramps in your classroom using cardboard, gutters, or wood and send various objects down it. Talk with the children about what they are noticing.
5. Conduct measurement experiments using materials you have in your classroom. Use materials of all sizes from paper clips to children's bodies to measure various objects and distances. Compare what materials worked the best.
6. Create a word wall all about trains to promote vocabulary expansion. Begin by adding words children came up with while completing the Web of Knowledge. As the children learn more about trains and how they work, add new train vocabulary to the wall. Watch the word wall grow and help the children realize all the new words they are learning to read and write.
7. Visit your school or local library and check out all available Thomas books as well as other books about trains or how things work. Have a special silent reading time.
8. Conduct some cause and effect experiments. Mix liquid watercolors to see the changes in color, do some mixing of baking soda and vinegar to see the volcanic reaction, or make Silly Putty using the following recipe.
<http://www.stevespanglerscience.com/lab/experiments/glue-borax-gak>

During Your Visit

Try some of these activities while you are exploring *Thomas and Friends™: Explore the Rails*.

1. Count how many Thomas and other characters you find in the exhibit. Share and compare your results with others in your class.
2. While in the gallery, have children find things that are the length of their hands. Report their findings when you get back to the classroom.
3. Experiment with magnets. Connect the trains, turn them around and connect them again. Make discoveries about how north and south poles work.

4. Search for vocabulary about trains in the exhibit. Ask children to report words they already knew and new words as well. Have a small clipboard or tablet to record their vocabulary. Put the words on a word wall when you return to the classroom.
5. Bring stopwatches. Time the children as they move their trains from one location to another. Pose challenges, asking them to find shorter routes or to find the best train for certain jobs.
6. Encourage children to collaborate with their friends to get Percy going or fix the wobbly wheels. Discuss the tools they are using and how they help people. Encourage problem solving when they are not able to find a solution.
7. There may be wait times for some components. Encourage your students to negotiate with each other to take turns and share materials. Involve your students in challenges or reading while they wait.

After Your Visit

After you visit *Thomas and Friends™: Explore the Rails*, try some of the following activities to reinforce and extend the experiences of your students.

1. Add new words to your word wall.
2. Reflect on your field trip to see Thomas and Friends. Invite students to write about their favorite adventure in Thomas and Friends and illustrate it in books or journals.
3. Do small group investigations on different inventions and how they changed lives. Have the groups make posters and give presentations on their chosen invention.
4. Thomas and his friends show their emotions and feelings with their facial expressions and their voices. Make faces together showing what all the different emotions look like. Discuss how friends and/or family can be helpful when someone is feeling sad or mad and how it is also fun to share happiness with others. Share stories about how they have helped cheer someone who was feeling sad.
5. Do some chain reaction science: Set up ramps on slopes with balls of different weights. At the bottom of the ramp, set out dominoes in a row (or any small materials that stand up). Give the children opportunities to send balls down the ramps and watch the chain reaction that follows. Experiment with different numbers of dominoes, different balls and different slopes.
6. Using construction paper cut in rectangles, squares and circles, glue, scissors, crayons, and googly eyes, make your own trains with facial expressions that show their feelings.
7. Play Train Charades. Take turns acting out one of the Thomas characters and having friends guess which train you are.
8. Turn your dramatic play area into a train station with tickets, times, routes, luggage, etc. Use large cardboard boxes to create a train to add to your station.

Suggested Book List:

Fiction

- *Trains Go* by Steve Light (board book, 0-3 years)
- *Chugga-Chugga Choo-Choo* by Kevin Lewis (board book, 1-4 years)
- *Fast Train, Slow Train* by Rev. W. Awdry (0-3 years)
- *Freight Train* by Donald Crews (board book, 0-3 years)
- *Hibernation Station* by Michelle Meadows (2-6 years)
- *Steam Train, Dream Train* by Sherri Duskey Rinker (3-6 years)
- *Thomas Gets a Snowplow* by Rev. W. Awdry (3-7 years)
- *The Goodnight Train* by June Sobel (2-5 years)
- *Thomas and the Hide and Seek Animals* by Rev. W. Awdry (2-5 years)
- *The Great Race* by Kerry Milliron (4-6 years)
- *Flynn Saves the Day* by Rev. W. Awdry (4-6 years)
- *Locomotive* by Brian Floca (3-7 years)
- *Train* by Elisha Cooper (4-8 years)

Non-fiction

- *Rosie Revere, Engineer* by Andrea Beaty (4-8 years)
- *See Inside How Things Work* by Conrad Mason (4-8 years)
- *How a Real Locomotive Works* by William Trombello (4-8 years)
- *All Aboard Trains* by Mary Harding (4-8 years)
- *Big Book of Trains* by DK Publishing (5-8 years)
- *My Big Train Book* by Roger Priddy (board book, 1-4 years)