EXPLORER Field Trips

Tech Museum Project Kit

Congratulations! You're going to The Tech Museum! Use these project ideas to enrich your educational experience. Read through them before you go to make sure you understand the terms and concepts, and to help you determine if you want to expand upon any of them. You'll find fun facts and printable worksheets at the end of this packet.

a- elementary level activity   b- middle school level activity   c- high school level activity

Language Arts

There is so much to see at The Tech Museum! Choose one of the exhibits that you'd like to explore deeper. Then complete one of the activities below:

a. Imagine you come from another planet! Explore your favorite exhibit and talk about how it might look or feel if you were from another planet. Do you have tech like this where you come from? What would you use it for? Use your exploration to create a story and tell your story to others. You can even draw a picture for your story and write it down if you want!

b. Imagine you were going to teach about your favorite exhibit to a class of students just like you! How would you get your students excited about it? What would you teach them? Write a short lesson plan and then find someone to give your lesson to. Don't forget to include questions to get your student(s) thinking!

c. Imagine you lived 1000 years ago. If you saw your exhibit for the first time, what would you think? What would you try to do with it? Could you find a useful purpose for it? How could you use it to improve your life or the lives of others? Write a short essay about your ideas.

Materials required: Notebook, pen/pencil
Submission: A copy of your writings/drawing, and any pictures/videos

Teaching or learning notes:

Applied Math

Technology is fueled by imagination, but if it weren't for math, nothing would work right! Observe the math all around you and discover just how important it is.

a. Go on a shape hunt! Find all the shapes you can, and create a short report with pictures/drawings of the shapes you found, their use, and importance.
b. Explore the math needed in one of your favorite exhibits. What kinds of math does the creator/designer need to know in order to make it function properly? Of the math used, what do you already know, and what would you need to learn? Write a short report on the math involved in your favorite exhibit.
c. Identify math in one of the exhibits. Using estimates or measurements, run through a few of the equations needed to create that exhibit. Draw a diagram of the exhibit and label where your math is applicable and the equations you used.

Materials required: Notebook, pen/pencil, calculator or smartphone (optional)
Submission: Your calculations, estimations, and conclusions, and any pictures/videos

Teaching or learning notes:

<u>Science</u>

There is more science in The Tech Museum to see and do than you could possibly do in one day! Take some time with one of your favorite exhibits to document the science. What questions were the scientists asking that inspired them to think of this exhibit? How did they go about testing their ideas? What did they need to build their exhibit/experiment? What questions were answered from their experimenting?

a. Talk about what goes into doing an experiment to develop new technology. What methods did the scientists use to create the exhibit? Draw or write about your ideas.
b. Practice using the Scientific Method to analyze the exhibit. What was the scientist's initial question? What was their hypothesis? How did they test it and what did they conclude? Write down your analysis.
c. Design your own exhibit. After analyzing an exhibit and how it's creators used the Scientific Method, use the same method to ask and answer your own question and design your own tech. Design an exhibit to show others your work or explain how you can use the same exhibit to answer your own question. What problem is your tech providing a solution to? Draw a picture or explain it in a short essay. If you want, take it a step further and actually build your tech!

Materials required: Notebook, pen/pencil
Submission: A copy of your drawings, diagrams, maps, or designs, and any pictures/videos

Teaching or learning notes:

Social Studies

The technology we have today is a direct result of generations of study, trial, and error. Learn more about the history of tech.

   a. Choose one exhibit and think about what sorts of problems in society it was designed to solve. How would you solve that problem? What kinds of things do you think they did to test and find solutions? Discuss the developmental history of the exhibit you chose and/or write a short paragraph about it.
   b. Choose one innovative tech design to learn more about. Research the problem it was designed to solve, and as many of the steps it took to reach the final product as possible. How long did it take to finally come up with the final tech? What other tech was needed to create this one? Can you see the progression of thought and experiment needed to get where we are today? Write a short essay on your findings.
   c. Choose one tech design to create a detailed timeline for. Including previous versions and other tech needed to make the one you are studying, show the ideas and inventions necessary to get where we are today. Take your timeline back as far as you can, and include dates, inventors, and inventions along the way.

Materials required: Notebook, pen/pencil, smartphone (optional)
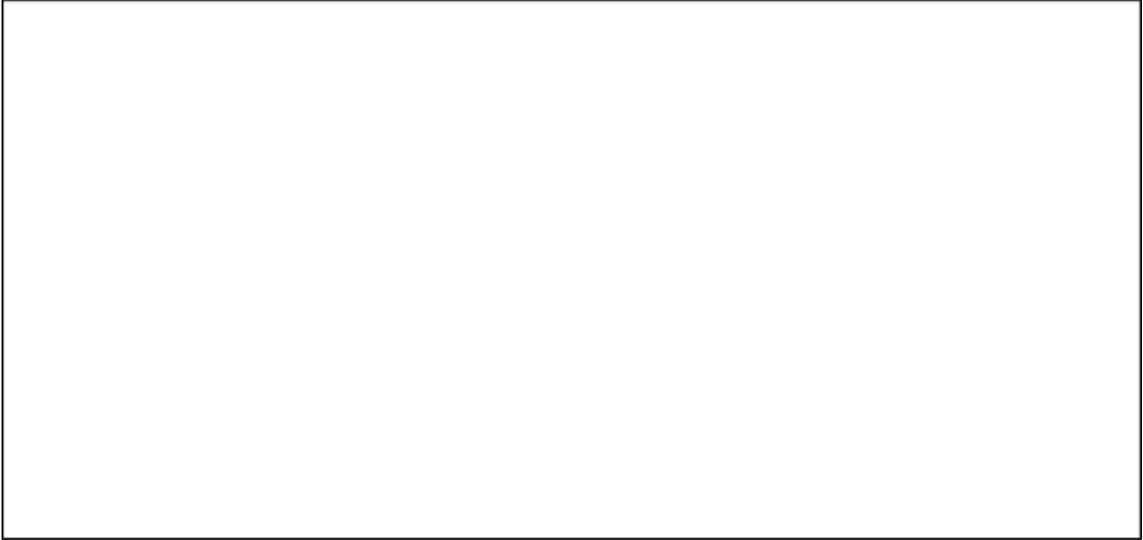Submission: A copy of your writings/drawings, and any pictures/videos

Teaching or learning notes:

Fun Facts

- The Tech Museum consists of: 15,187 tons of concrete; 80,000 handmade tiles; 9 restrooms; 95 miles of electrical wire; 19 miles of electrical conduit piping; 45 miles of phone wire; 400 tons of duct work; 12 miles of water and drain pipe; 17,600 S.F. of wood floor; 144 doors; 2,000 sqft of glass; 3,800 light fixtures; 101 trees; 100 computer monitors; 2,224 copper jacks and 475 network outlets!

- San Jose is the third safest large city in America.

- More patents come out of San Jose than any other city in the country!

- San Jose has some of the best weather, with an average of 300 sunny days every year.

- Boasting a presence of close to 7,000 tech companies, San Jose is the most concentrated tech center in the entire world.

- The Tech Awards is a program of the Tech wherein a yearly ceremony is held for individuals and organizations to get recognition for their technological contributions to improving the human condition.Since the first Tech Awards were held in 2001, the awards program has honored 287 laureates who have gone on to improve the lives of more than 2 billion people.

- The first Tech Museum which opened in 1990 was only 20,000 sqft and lovingly called "The Garage".

- Over 4,000,000 have visited the Tech Museum since its opening!

The San Jose Tech Museum

1. Draw a picture of your favorite exhibit at the museum.

2. Describe your favorite exhibit and why you love it.

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3. What is one thing you learned about body metrics?

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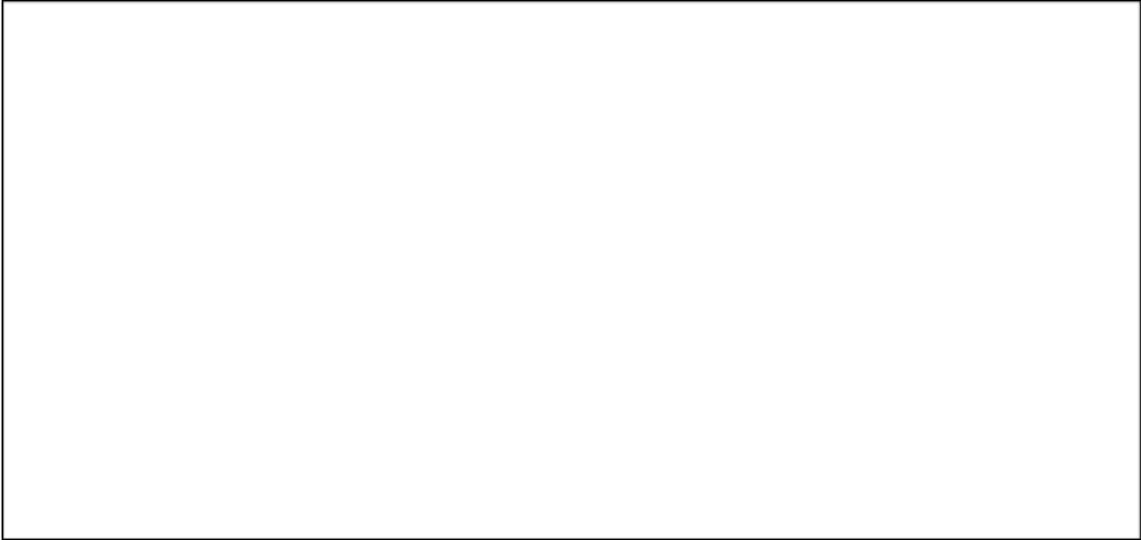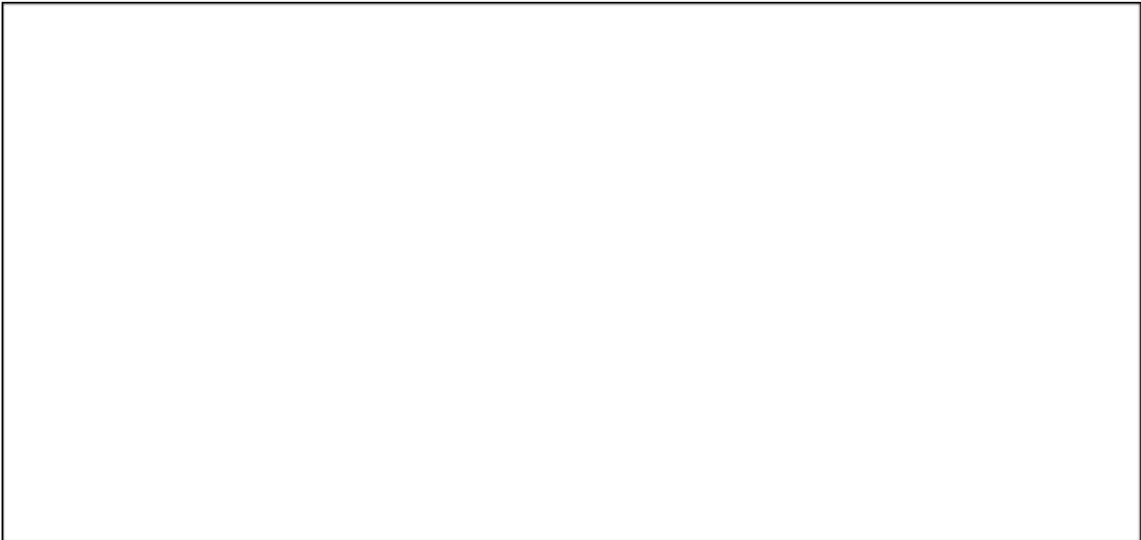
4. Describe or draw a social robot you saw or created yourself.

5. Describe or draw a biodesign you saw or created yourself.

6. What is one thing you learned about cyber sleuthing?

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BONUS:

Discuss the importance of technological advances to society and culture. How are museums like The Tech vital to our civilization?

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