The Amazing Machine exhibit addresses in more depth how various machine components transmit energy, change direction of motion, and provide power or control in everyday machines. Help your students make connections between the workshop and Amazing Machine by using the Exhibit Research Sheet (below) to guide students’ exploration of the exhibit.

If the class generated a list of questions about machines and engineering (see Pre-visit Discussion), encourage each student to choose one question, record it on the Exhibit Research Sheet, and look for information relating to that question in the exhibit.

Additionally, here are some examples of guiding questions you might ask during your students’ exploration of the exhibit:

- What tasks do you think these machines performed? How did each make its task easier or faster?

During-visit Resources

**K’Nex Construction Challenge**

**IN THE K’NEX CONSTRUCTION CHALLENGE WORKSHOP, YOUR STUDENTS EXPERIENCE THE ENGINEERING DESIGN PROCESS AND EXPLORE THE WAYS THAT DIFFERENT MACHINE COMPONENTS WORK TOGETHER TO PERFORM A TASK.**

The Amazing Machine exhibit addresses in more depth how various machine components transmit energy, change direction of motion, and provide power or control in everyday machines. Help your students make connections between the workshop and Amazing Machine by using the Exhibit Research Sheet (below) to guide students’ exploration of the exhibit.

If the class generated a list of questions about machines and engineering (see Pre-visit Discussion), encourage each student to choose one question, record it on the Exhibit Research Sheet, and look for information relating to that question in the exhibit.

Additionally, here are some examples of guiding questions you might ask during your students’ exploration of the exhibit:

- What different components do you see in each machine? How do they transmit energy? Do they change the direction of motion?

Try out the interactives relating to various machine components.

- How many different types of components can you find? What are they?
- In what way does each type of component help to perform tasks? How does it transfer energy? Motion?
- What everyday machines shown in the exhibit use each of these components? What are some other machines you’ve seen that use them?
- Can you think of any other types of components that are not represented in this exhibit? How do they transfer energy or motion? What machines make use of these components? How do you think they help a machine to make a task easier or faster?

Read the story about Barthelemy Thimonnier, the inventor of the sewing machine.

- Why do you think Thimonnier decided to design and build a sewing machine?
- What challenges did he face during the design process?
- Do you think he was a successful engineer? Why or why not?

The Amazing Machine Educator Guide contains more information and resources relating to the exhibit, including additional activities and curriculum connections. Find it at [www.fi.edu/teachers/educator-guides](http://www.fi.edu/teachers/educator-guides).
K’Nex Construction Challenge
AMAZING MACHINE EXHIBIT RESEARCH SHEET

Draw or write about something in the exhibit that talks about how a machine component can change the speed or direction of movement.

Draw or write about something in the exhibit that talks about how a machine is designed and built.

What is one new thing you learned from this exhibit?

What new questions do you have about how machines work, or how they are designed?