

Teacher's Supplement

November/
December 2015

ask

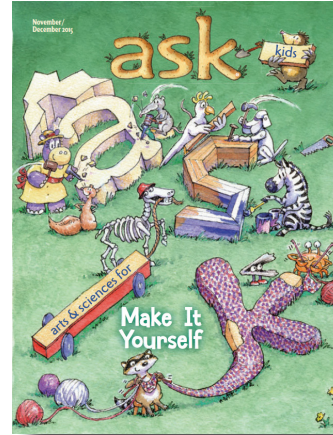


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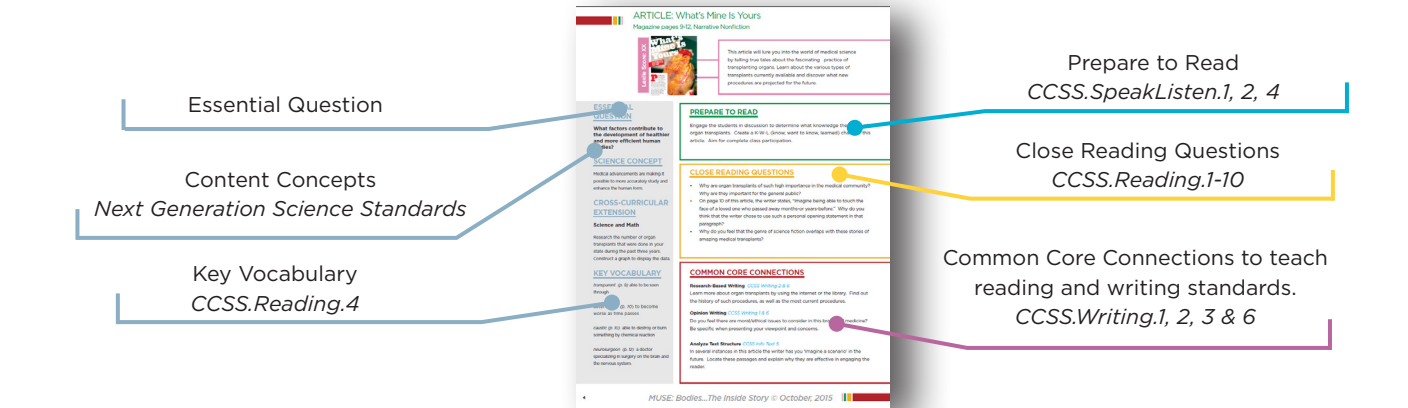
OVERVIEW

In this magazine, readers will explore how people in different times used the available resources to make things that improved their

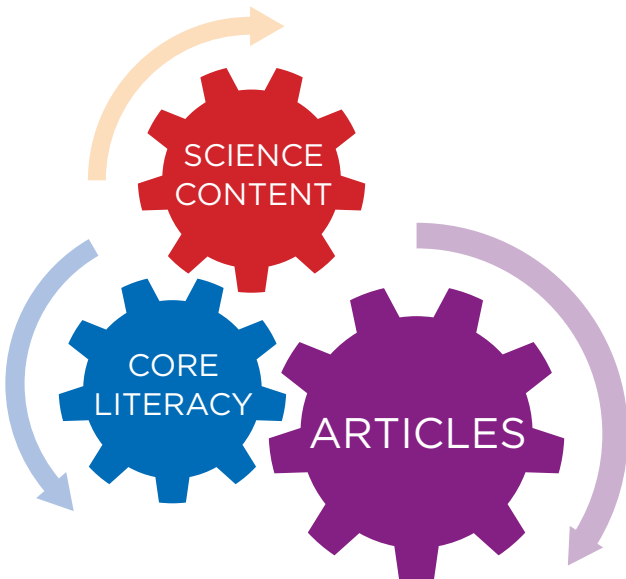
*lives. **ASK: Make it Yourself** invites readers to question how making things can help improve lives today. From foosball to draft snakes, five activity-based articles provide opportunities to create things that will make a positive impact on people's lives.*

ESSENTIAL QUESTION:

How has making things helped humans in the past and why is it important today?



Magazine articles can be easily grouped to make cross text connections and comparisons. Our Common Core mini-unit guides students to read and discuss multiple articles and integrate ideas and information. (CCSS.Reading.9) Discussing multiple articles (CCSS.SpeakListen.1, 2, 4) prepares students to write texts to share and publish in a variety of ways. (CCSS.Writing.2)



READING

Core literacy concepts, such as the ones found in the Common Core State Standards, help students access social studies and science content. Integration of both literacy thinking and content study offers students a great way to become experts in reading informational text and literature for content knowledge. This guide provides questions to cover many core literacy concepts.

Draw Inferences (CCSS.InfoText.1)

Describe Relationships (CCSS.InfoText.3)

Analyze Text Structure (CCSS.InfoText.5)

Interpret Visual Information (CCSS.InfoText.7)

Summarize (CCSS.InfoText.2)

Determine Word Meaning (CCSS.InfoText.4)

Understand Author's Point of View (CCSS.InfoText.6)

Explain Reasons and Evidence (CCSS.InfoText.8)

FOCUS STANDARD: CCSS. InfoText 9: Integrate Ideas and Information:

Have students read multiple articles from this magazine on the same topic, build knowledge, and make cross-text comparisons. See ideas on Cross-Text Connections on page 13 of this guide.

SPEAKING AND LISTENING

Use the articles in this magazine to spark meaningful discussions in person and online. Encourage deeper discussions where students can become topic experts. (CCSS.SpeakListen.1, 2, 4)

DISCUSSION OPTIONS—IN CLASS OR ONLINE

Article Clubs: Form small reading groups of students reading the same article. Have students discuss the content, share ideas, and critically evaluate the text.

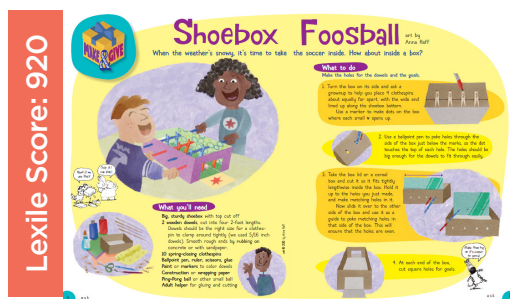
Inquiry Discussions: Pose and open-ended questions that engage students to form an opinion and support it with reasons found directly in the text.

Jigsaw Clubs: Form small reading groups of students reading *different* articles. Invite students to share information and resources with each other.

Whole Class: Launch with an essential question. Encourage students to find and share evidence from different articles building a greater understanding of the question.

WRITING

Use the articles in this magazine to prompt **informative/explanatory writing** (CCSS.Writing.2). Have students use evidence from the texts to share information about social studies, language arts, or science content in the articles. See the **Mini-Unit** section of this guide (pages 14 – 16) as well as the **article pages** (pages 4 - 12) for ways to incorporate writing into your instruction.



Find out how to make your own foosball game with just a few common household objects and materials.

ESSENTIAL QUESTION

How has making things helped humans in the past and why is it important today?

SCIENCE CONCEPT

Designing inventions to solve problems involves creative problem solving within the constraints of limited materials and resources.

CROSS CURRICULAR EXTENSION

Engineering and Design

Follow the directions in the article and create your own foosball game. How might you adjust the design for a different version of the game?

KEY VOCABULARY

clamp (p.6) to press or squeeze (something)

dowel (p.6) a metal or wooden rod

stadium (p.8) a large usually roofless building that has a large open area surrounded by many rows of seats and that is used for sports events, concerts, etc.

dollop (p.8) a small amount of something

PREPARE TO READ

Call on students to explain the game of foosball to those who might not have played it, or show a video clip of children playing the game. Ask students how they might make their own foosball game with common materials? Explain that they will find out the author's version of the game. Ask students to see if any of their ideas are included or could be used?

CLOSE READING QUESTIONS

- How did the author organize the directions? What text features help you know what to do?
- How did the author use measurement in the directions? Decide which measurements you think are most important in the article.
- Which steps are the most important to follow exactly? Explain why these steps make a difference?

COMMON CORE CONNECTIONS

Interpret Visual Information *CCSS Info Text 7*

The article uses many illustrations to help show the steps of building the foosball game. Which illustration was the most helpful and why? How did this illustration provide details to support the text?

Presentation of Knowledge and Ideas *CCSS Speaking and Listening 4*

Present your game to others. Explain any challenges you had making the game and if you made any changes to the design. Demonstrate the game in action.

Writing Explanatory Text *CCSS Writing 2 & 4*

Write directions and rules to your foosball game so others know how to play, even if you aren't there to show them. Choose how to explain and organize your writing to make it easy to understand.

ARTICLE: Fishing Game

Magazine pages 7, Procedural Text



Read to find out how to make a fun fishing game with your own colorful crafty fish. Not fishing season? No problem!

ESSENTIAL QUESTION

How has making things helped humans in the past and why is it important today?

SCIENCE CONCEPT

Designing inventions to solve problems involves making choices for best solutions.

CROSS-CURRICULAR EXTENSION

Art

What elements of color, pattern, and design are you using in this activity? Explore ways to integrate art skills in your game to add artistic flare.

KEY VOCABULARY

creature (p.9) an imaginary or very strange kind of animal

magnet (p.9) a piece of material (such as iron or steel) that is able to attract certain metals

PREPARE TO READ

Ask students to share the kinds of games they have made. Ask them what they used and how their games worked. Explain that in this article they will find out how to make a fishing game. Direct the students to the article illustrations. Only using the illustrations, have students try to explain to a partner what to do. Ask: What additional information do you think the text will explain?

CLOSE READING QUESTIONS

- How do text and illustrations work together to help you follow directions? Show an example from the article.
- Which decisions does the author leave up to you? Underline these places in the text where you make your own choice.
- Steps one through three include the use of folded paper. Why do you think the author instructs you to use folded paper?

COMMON CORE CONNECTIONS

Interpret Visual Information *CCSS Info Text 7*

If you would be able to add one more illustration, what would it be? How would this picture help others in building their game?

Key Ideas and Details *CCSS Info Text 1 & 3*

The author provides a choice of how to construct the fishing pole to catch the fish. Explain the two options, which one you would choose, and why you would choose it.

Text Features *CCSS Info Text 5*

Why are numbered steps helpful in directions? Are there any steps that could be put in a different order?



Find out how people are printing artificial hands on 3-D printers to help out those who need a hand. They are cheap, easy to build, and really work!

ESSENTIAL QUESTION

How has making things helped humans in the past and why is it important today?

SCIENCE CONCEPT

Designing inventions to solve problems involves testing solutions to make changes and improvements.

CROSS-CURRICULAR EXTENSION

Engineering and Design

After reading the article, design your own version of a robot hand. What features will you include in your design? What will you add?

KEY VOCABULARY

artificial (p. 10) not natural or real : made, produced, or done to seem like something natural

eager (p.11) very excited and interested

mechanical (p. 11) having or using machinery

prosthetic (p. 11) an artificial device that replaces a missing or injured part of the body

PREPARE TO READ

Ask students to take a moment to consider what it might be like not to have a hand. Have them keep one hand into a fist to feel what would be difficult to do without fingers to grasp and manipulate objects. Now consider having the option of a robohand! Ask: How would an artificial hand help? What if you could make them on a 3-D computer? Let's find out how it's done and how people are getting involved.

CLOSE READING QUESTIONS

- Why did the author title the section "Robots and Superheroes" on page 12? Why do you think the author chose the word "superhero"?
- Look for places in the article where people are working together to solve a problem. Share these with a partner.
- Why do you think the author placed "How Does a 3-D Printer Work" (page 13) in a section separate from the rest of the article?

COMMON CORE CONNECTIONS

Key Ideas and Details *CCSS Info Text 1 & 3; CCSS Writing 2*

The section "How Does a 3-D Printer Work" on page 13 includes a lot of information. Pick out details from this section that can be put into a list of how-to steps. Write your steps in sequential order to explain how a 3-D printer works.

Craft & Structure-Personal Experience *CCSS Info Text 5, 6*

How does the author use people's personal experiences using and making robot hands to help get ideas across in the article? Choose one of the examples and explain how it helped you relate to the information in the article.

Narrative Writing *CCSS Writing 3*

Review what children shared about their new robot hands in the article, then write a narrative from the point of view of someone using a robot hand for the first time. How do they feel having a working hand? What do they try first? What are the challenges? What might they be able to do that real hands can't do?



Make a snake that is fun to create and keeps out the cold by a drafty door.

ESSENTIAL QUESTION

How has making things helped humans in the past and why is it important today?

SCIENCE CONCEPT

Insulation is a way to save energy and control room temperature.

CROSS-CURRICULAR EXTENSION

Math

Add measurements to this activity to create a snake the best size to cover the space under a door.

KEY VOCABULARY

draft (p.16) cool air moving in a closed space (such as a room)

stuffing (p.16) soft material that is used to fill a pillow, cushion, etc.

PREPARE TO READ

Share: Spaces under doors let in wintry drafts that cool the room and numb your feet. In this activity you will make a fun draft snake that will be a sure chill stopper. If the doors and weather are appropriate in your school, you might want children to investigate which doors are letting in cold air when closed.

CLOSE READING QUESTIONS

- The author organized the directions into three sections. Why do you think the directions are arranged in this way?
- In close reading we often need to re-read in order to understand. Pay attention to what sentences you need to read more than once and explain what makes this direction more complicated.
- Which illustrations are most helpful in the article? Explain why.

COMMON CORE CONNECTIONS

Making Inferences *CCSS Info Text 1*

What purpose do you think the beans have in the function of the snake? What is the purpose of the cotton?

Presentation of Knowledge and Ideas *CCSS Speaking and Listening 4*

Demonstrate how to make a draft snake to others. Show the important steps and include tips along the way for the easiest construction. You might want to video record your presentation!

Collecting Data and Writing Reports *CCSS Writing 2 & 7*

Use thermometers and strips of tissue to check temperatures and breezes coming in under the doors of your house. Check the molding of the doors for insulation materials or weather stripping. Put the draft snake in place and collect the data again in 30 minutes. Write a report of your findings. What did you discover?



A gentle shake creates a magical snowfall on a miniature snow globe scene. Create your own wonderland in this fun winter activity.

ESSENTIAL QUESTION

How has making things helped humans in the past and why is it important today?

SCIENCE CONCEPT

Gravity effects the direction of movement.

CROSS-CURRICULAR EXTENSION

Science

Water interacts differently with objects depending on what they are made from. What properties need to be considered when choosing materials to use for this project?

KEY VOCABULARY

compose (p. 17) to arrange the appearance of (something, such as a picture or image) in an orderly or careful way

figurines (p.17) a small figure or model of a person made of wood, plastic, etc.

glycerin (p.17) a thick, sweet, clear liquid used in making medicines, food, soap, etc.

PREPARE TO READ

Show children a commercially made snow globe. Ask: What did the designers need to think about before making this globe? How do you think this globe was made? What order were the steps completed? In this article you will get a chance to make your own snow globe. How do you think your globe might be different from this one?

CLOSE READING QUESTIONS

- What type of article is this? What text features let you know?
- What are some of the decisions you need to make in this activity? Find one decision you need to make in the activity and explain why it is important.
- What key details help guide you so you don't make a mess when making your snow globe?

COMMON CORE CONNECTIONS

Making Inferences *CCSS Info Text 1 & integration of Knowledge CCSS Info Text 9*

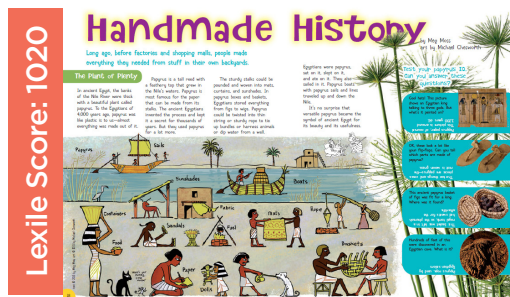
The author states that waterproof glue is "tricky". What do you think is tricky about it? Look at the directions on the waterproof glue your teacher has chosen. What precautions could be added to these directions?

Poetry *CCSS Writing 3*

Make a list of expressive words that come to mind as you watch your snow globe scene. Select from these words to create a poem that using the motion of language to resemble snow falling.

Interpret Visual Information *CCSS Info Text 7*

How do the photos help you understand directions in this activity. Take three photos of your own project as you complete the steps. What decisions did you make about when to take the photos, what angle to use, and how you framed each photo?



Throughout time people have relied on natural resources to make things that help them survive and enjoy life. In this article you will travel back in time to see how papyrus, beeswax and honey, and the buffalo were used to make an amazing variety of objects.

ESSENTIAL QUESTION

How has making things helped humans in the past and why is it important today?

SCIENCE CONCEPT

Humans depend on natural resources for needed goods and services.

CROSS-CURRICULAR EXTENSION

Science

Identify the natural resources available in your “backyard”. Which natural resources could be used to make some of the products included in this article?

KEY VOCABULARY

papyrus (p. 18) a tall plant that is like grass and that grows in marshes especially in Egypt.

sinew (p. 22) strong tissue that connects muscles to bones

versatile (p. 19) having many different uses

PREPARE TO READ

Have students take a look at their shoe and identify the different materials used to make it. Ask: What if you had to use only things found in nature? How might you make a shoe? Explain that in this article they will take a look at how three different materials were used to make many important objects.

CLOSE READING QUESTIONS

- How do the IQ questions help you interact with the information in this article?
- How do the labels in the illustrate scenes reinforce what is in the text? Are there other labeled illustrations that could have been added?
- Look through the article to find objects that are still made by hand to today. Add to a class chart that lists the item and where it is found today (beeswax candles, craft fair).

COMMON CORE CONNECTIONS

Compare and Contrast Information *CCSS Info Text 9*

Review the products made with beeswax/ honey, papyrus, and buffalo. Which natural resource do you feel is most valuable? Give reasons for your decision based on evidence from the text.

Interpret Visual Information *CCSS Info Text 7*

Study the photos and discuss how they contribute to the information presented in the text. What characteristics do these photos have that add details to the text descriptions?

Informative Writing *CCSS Writing 3 & 6*

Choose an object you can make with a natural resource. Describe this object add write directions for making it. Include photos that add to the information you need to communicate. Examples might be to make a clay bowl, cornhusk doll, or game from sticks and acorns. Share your writing so others can try to duplicate your creations.



Kits are used to help people make all kinds of things, even houses! This article shows real advertisements on how to order a house kit by mail!

ESSENTIAL QUESTION

How has making things helped humans in the past and why is it important today?

SCIENCE CONCEPT

Innovation solves a need or a want and a product design includes specified criteria for success and constraints on materials, time, and/or cost.

CROSS-CURRICULAR EXTENSION

Science & Engineering

Create a miniature house building kit using cardboard pieces or balsa wood. Include directions and plans so anyone can build the house from your kit.

KEY VOCABULARY

assembly (p.22) the act of connecting together the parts of something

foundation (p.24) a usually stone or concrete structure that supports a building from underneath

PREPARE TO READ

Kits include all the parts and pieces needed to build something. The person who buys the kit follows directions to put it all together. Why do people use kits to build things? Why do you think someone might want to buy a kit to build an entire house? In this article we will look into house kits ordered and delivered by train in the early 1900s.

CLOSE READING QUESTIONS

- How are primary documents used in the article? What information do they add?
- What is the main idea of the article? What evidence did you use from the article to decide?
- What details in the “Dear Homebuyer” provide clues that this writing is from the past?

COMMON CORE CONNECTIONS

Explain Events *CCSS Info Text 3*

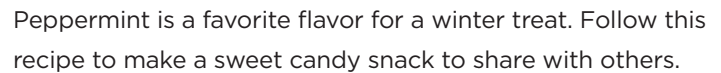
Why were mail-order houses available during this time period? Look for clues in the article to support your answer.

Making Inferences & Using Visual Elements *CCSS Info Text 1 & 7*

Why do you think the author included the photo from the movie in the article? What might the author be trying to say about building mail-order houses?

Research-Based Writing *CCSS Writing 2 & 6*

Today there is a movement for tiny houses and alternatives to living in a traditional home. Research to find out if there is anything similar to the mail-order houses described in the article available today. Report your findings to the class.





PREPARE TO READ

ESSENTIAL QUESTION

SCIENCE CONCEPT

CROSS-CURRICULAR EXTENSION

Ask your parents for names of your ancestors to see if any names might be related to a skill or craft. Find out more about how names give clues to family history.

KEY VOCABULARY

permanent (p. 27) lasting or continuing for a very long time or forever

CLOSE READING QUESTIONS

- ## COMMON CORE CONNECTIONS

Review the names of classmates, or from a local phone book. How many names can you find that might originate from what people made in the past?

This article depends on small illustrations to represent concepts. How do these pictures help you visualize the different names?

What are you good at making? Think about what name you would name yourself after? Collect the maker names of your classmates into a class list.



CROSS-TEXT CONNECTIONS WITH MULTIPLE ARTICLES

COMPARE ARTICLES

SYNTHESIZE: Guide students to compare articles they read. Help students find the connections between pieces of information in multiple texts. Use prompts, such as the following examples, to have students work together to **Integrate Ideas and Information** (CCSS.Reading.9):

- Choose any two of the activity articles in this issue and compare how the articles are written to guide you to make the object. What is the same about the two articles? What is different? Which one is easiest to follow? Why?
- Look for the Make & Give logo in the left corner of some of the articles. Discuss with a partner why you think this logo was added to these particular pages. What do you think would make the best gift? Support your reasons. Was there any other article in this issue you think might also have deserved a Make & Give label?
- Review the examples of names based on professions in “Making a Name” (page 27). Next, look through the article “Handmade History” (pages 18-23) to see which names you would find in these different times. What other skills might be turned into maker names?
- Review the activity articles, “Draft Snake” (page 16), “Snow Globe”(page 17), and “Fishing Game” (page 9). Which activity uses the most materials? Which activity would cost the most to make? Use data to support your answers.
- How does making things help people and the environment? Find evidence from two or more articles to support you answer.
- Using information from multiple articles, format a response to the essential question: **How has making things and being inventive helped humans in the past and still important today?**

EXPLORATORY LEARNING - FLEXIBLE MINI-UNIT DESIGN

The mini unit offers three levels of activities. The Engage section helps activate prior knowledge. Compare Articles offers additional ways to use information from multiple articles that prepares students to integrate their ideas and knowledge in the Apply activity.

ENGAGE

READ AND COMPARE

APPLY

ENGAGE: Engage students in the topic of making things for themselves or others that have a useful purpose. First student make a two-column list as seen below and brainstorm all the things they enjoy making and what purpose each has. After sharing their lists with others, they complete a second list, this time with other things they would like to try making from ideas shared with classmates or other brainstorms.

Things I Make	Purpose

Things I Want to Make	Purpose

Share the essential question:
How has making things helped humans in the past and why is it important today?



READ AND COMPARE ARTICLES: Begin with a focus article as a base for building content knowledge and model how to work through the text.

1) READ ALOUD: Use the article, “Robohand” (pages 10-15), as a focus article, or choose a different article that works well for your teaching goals. Share the article summary on page 6 of this guide. Students can read using their own copies of the article and sticky notes to mark places they find interesting or have questions about.

2) DISCUSS THE ARTICLE: After reading, guide students to turn and talk about the article with a partner. See the Article Page (page 6) for Close Reading Questions.

3) READ NEW ARTICLES: Help students choose additional articles to read based on their inquiry questions or what they wonder. Refer to the Article Pages for summaries of each article within *Make it Yourself*.

4) COMPARE ARTICLES: After students have read multiple articles, guide them to make cross-text connections. Refer to page 13 in this guide for prompts that help students integrate ideas and information from multiple articles.

CHOOSE A PURPOSE FOR READING

CLOSE READ: *CCSS Informational Text. 1* Mark the text, noting important details and highlighting what interests, surprises, or confuses you.

UNDERSTAND MAIN IDEAS TO DEVELOP EXPERTISE: *CCSS Informational Text. 2* Record the main ideas in the article. Note how these main ideas build on the main ideas from the focus article or other readings. How is your topic knowledge growing?



APPLY: MAKER FAIR

Use information from the articles to make things to share at your own maker fair.

The maker movement is popular for all ages. People have a desire to make things with their hands that serve a purpose for enjoyment and create inventive solutions to everyday activities. Maker fairs are a way to showcase handmade products and gain new ideas from others. In this Apply portion of the mini unit, children make things from ideas presented in the articles or craft their own product initiated from this issue.

Materials:

Make it Yourself Planner (page 19), materials associated with selected craft, tables and set up for fair

Getting Started

Explore the purpose of a Maker Fair with students. Look for examples on the Internet and choose what aspects you want to include in your fair.

Use the “Make it Yourself” graphic organizer on page 19 to make several possible plans of what to make. Students might pick an activity from this issue or come up with their own ideas.

Choose which one to complete by thinking about materials needed, cost, difficulty, and usefulness or enjoyment of the final product, plus how much you think you will enjoy making it!

Maker Lab

Each student gathers the materials needed to make the product

Hold Maker Lab sessions with plenty of time for building and problems solving during the make-it process.

Provide group sessions where the young designers get together to discuss the progress of their projects and ask each other questions to problem solve any aspects that might be challenging.

Maker Fair

Students can help plan the fair while building their products. Help guide them to make decisions and divide tasks so everything is ready on the big day!

Some of these decisions include:

Who will be invited? Will the participants also make something as part of the festivities? How will the word get out? Will there be donations or costs involved to support a charity?

Once the fair is complete, recap to discuss what went well and what might be changed or added for the next maker fair.

GROUP #: _____ **NAME:** _____

Mini-Unit Graphic Organizer: Make It Yourself Planner

What I want to make: _____ Purpose: _____

Making a _____			
What is Needed	What I have already made	What I want to make	Materials

What I want to make: _____ Purpose: _____

Making a _____			
What is Needed	What I have already made	What I want to make	Materials

What I want to make: _____ Purpose: _____

Making a _____			
What is Needed	What I have already made	What I want to make	Materials

Example

What I want to make: Board Game Purpose: To make a game that includes a challenge and can be played in group

Making a Board Game			
What is Needed	What I have already made	What I want to make	Materials
Game board		Make a game board from a piece of cardboard	Cardboard, markers
Dice	I can make dice from blocks of wood.	Make clay or wood dice	Small wood blocks, black marker
Playing pieces		Make figures from oven-bake clay	Oven-bake clay
Rules	We make game rules on the playground	Make board game rules.	Paper

NAME: _____

ANALYZE GRAPHIC FEATURES

GRAPHIC FEATURE	PAGE LOCATION	HOW THIS FEATURE HELPED YOUR UNDERSTANDING

NAME: _____

CONCEPT CHART

Show how reading multiple articles developed your understanding of the essential question or or your own inquiry question.

ESSENTIAL QUESTION OR INQUIRY QUESTION:

ARTICLE 1:

ARTICLE 2:

ARTICLE 3:

ancestor one of the people from whom a person is descended

*But there's a chance one of their **ancestors** did. (p. 27)*

artificial not natural or real : made, produced, or done to seem like something natural

*It's an online community that connects people who need **artificial** hands with hand designers and volunteers who have 3-D printers. (p.10)*

assembly the act of connecting together the parts of something

*Each board was numbered for easy **assembly**. (p. 25)*

clamp to press or squeeze (something)

*Dowels should be the right size for a clothespin to **clamp** around tightly. (p.6)*

compose to arrange the appearance of (something, such as a picture or image) in an orderly or careful way

*Take the lid off the jar and **compose** a nice scene with your plastic figures on the inside of the lid. (p. 17)*

creature an imaginary or very strange kind of animal

*Fold a piece of paper in half and draw an outline of a fish (or other **creatures**) so that its mouth is at one edge (not the fold). (p.9)*

dollop a small amount of something

*Open each clip, add a **dollop** of glue, and close over the dowel. (p. 8)*

double-boiler a pair of deep cooking pans that fit together so that the contents of the top pan can be cooked or heated by boiling water in the bottom pan

*Ask a grownup to help you melt the chocolate on the stove in a **double-boiler**. (p. 26)*

dowel a metal or wooden rod

*...2 wooden **dowels**, cut into four 2-foot lengths. (p. 6)*

draft cool air moving in a closed space (such as a room)

*Scare away cold with this useful **draft** snake. (p.16)*

eager very excited and interested

*Many families around the world were **eager** to try a Robohand. (p. 11)*

foundation a usually stone or concrete structure that supports a building from underneath

*...(3) dig a basement and lay a solid brick or stone **foundation**. (p.24)*

figurines a small figure or model of a person made of wood, plastic, etc.

*...small plastic **figurines** that you don't want back (p. 17)*

glycerin a thick, sweet, clear liquid used in making medicines, food, soap, etc.

*...about half a cup of **glycerin** (you can buy this at drugstores). (p. 17)*

magnet a piece of material (such as iron or steel) that is able to attract certain metals

*To make a magnet fishing game, tie a small **magnet** to the string (a magnet with a hole is good). (p. 9)*

mechanical having or using machinery

*Owen had made some **mechanical** hands for theater costumes that looked like just what Van As needed. (p. 11)*

papyrus a tall plant that is like grass and that grows in marshes especially in Egypt.

*Long ago in ancient Egypt, the banks of the Nile River were thick with a beautiful plant called **papyrus**. (p. 18)*

parchment paper strong, tough paper that is used by cooks

*Spread the melted mixture thinly on a piece of **parchment paper** or waxed paper. (p. 26)*

permanent lasting or continuing for a very long time or forever

*Over time, these second names became **permanent** family names. (p. 27)*

prosthetic an artificial device that replaces a missing or injured part of the body

*They asked whether the pair could build an entire artificial, or **prosthetic**, hand. (p. 11)*

sinew strong tissue that connects muscles to bones

*String-like **sinew** softened by chewing was perfect for bowstrings and sewing. (p. 22)*

stadium a large usually roofless building that has a large open area surrounded by many rows of seats and that is used for sports events, concerts, etc.

*You can line it with plain paper or wrapping paper or decorate it to look like a **stadium**. (p. 8)*

stuffing soft material that is used to fill a pillow, cushion, etc.

*Place cotton **stuffing** on top of the beans. (p.16)*

versatile having many different uses

*It's no surprise that **versatile** papyrus became the symbol of ancient Egypt for its beauty and its usefulness. (p. 19)*

Handmade History

- <http://animals.sandiegozoo.org/animals/bee>

San Diego Zoo site with photos and information about bees.

Robohand

- <http://enablingthefuture.org/>

Website of e-Nable, the organization discussed in the article.

Mail-order Houses

- <http://www.motherearthnews.com/diy/buildings/kit-homes-kit-houses.aspx>

Article discussing trends in the kit home market.

- <http://www.arts-crafts.com/archive/sears/>

Link to “Arts and Crafts” website with listings and images of Sears Kit Homes available to the public during the early 1900s.

Peppermint Bark

- <http://www.gardeningknowhow.com/edible/herbs/mint/growing-peppermint-plant.htm>

A gardening site that shows photos of peppermint and how it is grown.

Making a Name

- <http://www.namenerds.com/uucn/listofweek/jobnames.html>

This site lists additional surnames that are associated with occupations and things that people make.