

INNOVATION
ACTIVITY PACK

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A new way of doing things – better, faster, easier, more affordable – that’s innovation! Using a combination of analysis, problem solving skills, and imagination, innovation paves the way to solutions that make real differences.

This activity packet includes a selection of resources for educators, families, and students.

BOOKLIST: A list of books about innovation recommended by RIF

CLASSROOM ACTIVITY: An activity about innovation for the classroom

HOME ACTIVITY: An activity about innovation designed to help students continue learning at home

STUDENT ACTIVITY: An activity about innovation for students to complete independently

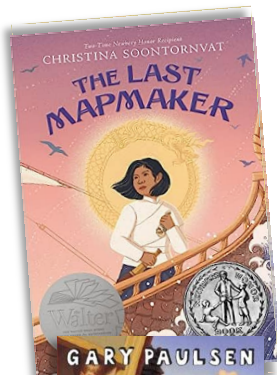
We suggest you print and copy the **Home Activity, Student Activity, and Booklist** pages and send them home to extend the learning.

For more reading resources, visit

www.RIF.org/literacy-central/collections/middle-school-family-literacy-initiative-innovation

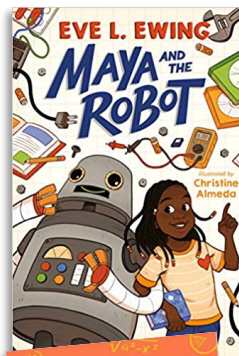
INNOVATION BOOKLIST

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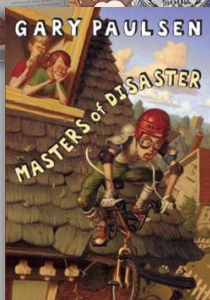
The Last Mapmaker

Authors: Christina Soontornvat, Adventure, Grades 3-7



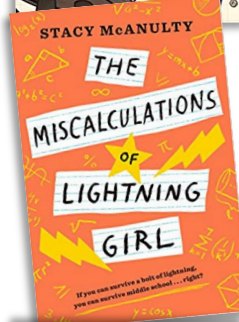
Maya and the Robot

Author: Eve L. Ewing
Friendship, Grades 3-7



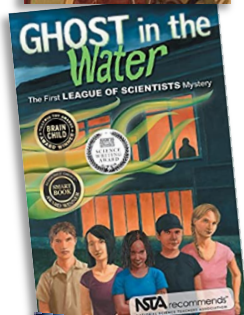
Masters of Disaster

Author: Gary Paulsen, Funny, Grades 3-7



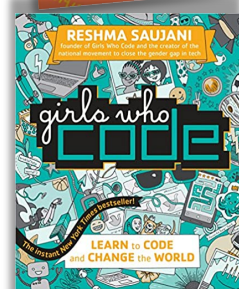
The Miscalculations of Lightning Girl

Author: Stacy McAnulty
Fantasy/Sci-Fi, Grades 3-7



Ghost in the Water

Author: Andy Kaiser
Horror, Grades 5-8



Girls Who Code: Learn to Code and Change the World

Author: Reshma Saujani,
The Arts, Grades 5-6



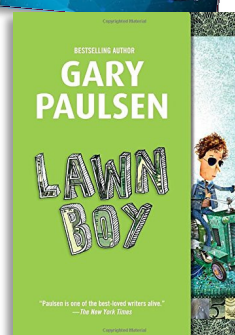
Virtual Reality Gaming, Ready, Set, Game!

Author: Betsy Rathburn
Sports/Gaming, Grades 4-6



A Soft Place to Land

Author: Janae Marks
Mystery, Grades 4-7



Lawn Boy

Author: Gary Paulsen
Funny, Grades 3-7



Ways to Make Sunshine

Author: Renee Watson
Relationships, Grades 3-6

CLASSROOM ACTIVITY

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SILENT DISCUSSION

Can innovation happen in silence? We think so. Set up and launch this silent discussion about biomimicry to see where you students go when they're limited to the page and the marker.

STEPS

1. Read books and articles about innovators and their innovations. Compose a list of various ways innovation happens (e.g., lightbulb moments, long process of trial and error, teamwork).
2. Using large, table-sized pieces of paper (e.g., butcher paper, easel paper), on each sheet write in the center in marker one of the words below:

Butterfly	Turtle	Porcupine
Pelican	Tree	Lily pad
3. Create stations on tables or counters and place one of the sheets at each station.
4. Give a brief description and example of biomimicry. It can be translated to "imitation of the living" and has been described as the application of things occurring in nature to the engineering of new materials.
 - Flight of pigeons --> Wright brothers' flying machine
 - Shape of a bird's beak --> Japanese bullet trainNote: Allow students to investigate biomimicry via computer stations or their phones during this exercise without talking to one another.
5. Establish a length of time for the activity. Give each student a marker and give the class these instructions:
 - i. Approach this as an innovation exercise: you are trying to innovate real-world solutions from the central ideas.
 - ii. This exercise should be done without talking and anonymously. You will be reading and building upon each other's written comments. You can agree or disagree, respectfully, but you are ultimately trying to get to some cool innovations using your own and others' ideas.
 - iii. When you are at a station, read what has already been written and then respond in writing. You may also sketch or diagram. (Establish threads and offshoots by drawing lines from the comment to which you are responding to your comment.)
6. At the end of the established time, have students walk around the room and read some of the written discussions. Then, lead a class discussion about some of the ideas that came from the exercise and the experience itself.

HOME ACTIVITY

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VIRTUAL VISIT TO THE NATIONAL INVENTORS HALL OF FAME

Your middle schooler has been learning about innovation at school and this activity is designed to extend the learning at home.

Take a virtual visit to the National Inventors Hall of Fame without ever leaving your phone or computer. Pick an online exhibit to look through with your child and talk about your reactions.

STEPS

1. Pick a comfortable time and place to take the virtual visit. Then, go to <https://artsandculture.google.com/partner/national-inventors-hall-of-fame-museum>.
2. Browse the main page for areas you might like to explore. There are online exhibits about individuals and also collections, such as Celebrating Women's History and Celebrating African American History.
3. Select at least one online exhibit to explore in depth and then discuss your reactions to what you learn.
4. If you enjoyed this activity, consider searching for other museums with online exhibits – about innovation or other topics – and continuing your virtual visits.

STUDENT ACTIVITY

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UPCYCLE CHALLENGE

Have you heard of upcycling? (As opposed to recycling, upcycling is making something that already exists better.) Innovation sometimes involves changing something that already exists versus creating something brand new. Challenge yourself to upcycle something of your own, such as a piece of clothing or a bag.

STEPS

1. Find something that you like aesthetically (i.e., something that is beautiful to you) but that isn't really serving you anymore. This could be a t-shirt that you like but it's become too small or faded or ripped, or it could be a bag with a cool graphic that you don't use to carry things anymore. It can be any type of item.
2. Make the item into something new using your innovation skills and whatever tools or materials you need (e.g., sewing kit, scissors, glue, tape).
3. There are no more instructions because you are now innovating!
4. Share your results with friends, family, and/or classmates who did the same exercise.