

Inventor Inklings

Primary Curriculum	Grade 1
Supplemental Curriculum	Grades 1–2
Notes	Standard unit comes with enough materials for 30 students. There is no refill kit as all components are consumable.

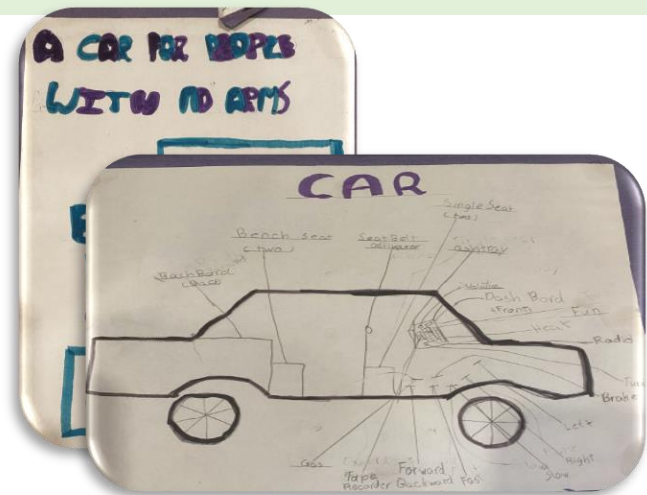
Description

What do you do with an idea?

Kids are natural inventors and problem solvers. As they enter elementary school, nearly every thing they see presents a new challenge and opportunity for creative thinking. *Inventor Inklings* starts them on this journey by coupling this inquisitive tendency with lessons in communication, collaboration, organization, and the engineering design process.

Using the overarching question of “What to do with an idea?” students begin to explore biomimicry, communication, and the engineering design process as they ask themselves: “How can we use science and engineering to help our community?”

Example Inventions



Number of Lessons*

Full unit – 22 lessons

Supplemental program – minimum 10 lessons

**Lesson = 30–40-min. block, 50% of full unit lessons can be delivered in non-science classes*

Best Suited For

- Classroom science instruction (Grade 1)
- For afterschool programs and/or camps we suggest the similar Makerspace Launch product (MSP011, \$350)

Overarching Enduring Understanding
How can we design solutions to our challenges?

Number of Lessons*

Full unit – 22 lessons

Supplemental program – minimum 10 lessons

**Lesson = 30 – 40 min block, 50% of full unit lessons can be delivered in non-science classes*

FLOW OF INSTRUCTION

While some people find a blank slate energizing and motivating, others can find it a bit intimidating. The same can be said for a new makerspace with its endless possibilities and focus on more freeform creativity. The *Inventor Inklings* unit promotes exploration and creativity—hallmarks of any makerspace—while providing a starting point for those who need a little inspiration.

The challenge incorporates a series of lessons that follow a general five-step sequence:

1. Student introduction and selection of challenge question
2. Brainstorming step
3. Design step including the discussion and setting of design goals/criteria and constraints
4. Feedback step including the collection and analysis of feedback data
5. Presentation (optional)

The student introduction is a critical step that helps to build student confidence as they approach a somewhat open-ended challenge. The remaining steps (brainstorming, design, and feedback) are focused on exploration and creation. The fifth step, Presentation, is optional but we consider it a great opportunity for students to not only practice presenting their ideas but also practice respectfully listening to other group's ideas.

Starting off your year with the *Inventor Inklings Unit* challenge not only gives you an opportunity to lay a foundation for communication and collaboration in your classroom, it also gives your students a chance to showcase their various strengths. Additionally, the design challenge is a good opportunity to introduce your class to (or both) of the main science topics for the year—biomimicry and/or communication—through the design or selection of a relevant challenge question.

Parts List

Full Unit	
<p>Printed Materials</p> <ul style="list-style-type: none"> • Educator Guide • Individual <i>My STEM Explorer Notes™</i> notebooks 	<p>Trade Books</p> <div data-bbox="932 296 1247 588" data-label="Image"> </div> <ul style="list-style-type: none"> • <i>The Most Magnificent Thing</i> by Ashley Spires
<p>Provided Equipment & Materials</p> <ul style="list-style-type: none"> • <i>Book of Ideas</i> (30 copies) 	
<p>Common Equipment & Materials Needed but NOT Provided</p> <ul style="list-style-type: none"> • Prototype building materials 	<p>Digital Resources</p> <ul style="list-style-type: none"> • Electronic copies of printed materials¹ • Easy-to-use links to publicly available videos and other information.

Supplemental Unit	
<p>Printed Materials</p> <ul style="list-style-type: none"> • Educator Guide • Individual <i>My STEM Explorer Notes™</i> notebooks 	<p>Trade Books</p> <div data-bbox="932 1146 1247 1438" data-label="Image"> </div> <ul style="list-style-type: none"> • <i>The Most Magnificent Thing</i> by Ashley Spires
<p>Provided Equipment & Materials</p> <ul style="list-style-type: none"> • <i>Book of Ideas</i> (30 copies) 	
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Overarching Enduring Understanding How can we design solutions to our challenges?	
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FLOW OF INSTRUCTION	
<u>K-2-ETS1-1</u>	Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
<u>K-2-ETS1-2</u>	Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
<u>K-2-ETS1-3</u>	Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
<u>1-LS1-1</u>	Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.
<u>1-PS4-4</u>	Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.
	<p>While some people find a blank slate energizing and motivating, others can find it a bit intimidating. The same can be said for a new makerspace with its endless possibilities and focus on more freeform creativity. The <i>Inventor Inklings</i> unit promotes exploration and creativity—hallmarks of any makerspace—while providing a starting point for those who need a little inspiration.</p> <p>The challenge incorporates a series of lessons that follow a general five-step sequence:</p> <ol style="list-style-type: none"> 1. Student introduction and selection of challenge question (K-2-ETS1-1) 2. Brainstorming step 3. Design step including the discussion and setting of design goals/criteria and constraints (K-2-ETS1-2) 4. Feedback step including the collection and analysis of feedback data (K-2-ETS1-3) 5. Presentation (optional) <p>The student introduction is a critical step that helps to build student confidence as they approach a somewhat open-ended challenge. The remaining steps (brainstorming, design, and feedback) are focused on exploration and creation. The fifth step, Presentation, is optional but we consider it a great opportunity for students to not only practice presenting their ideas but also practice respectfully listening to other group's ideas.</p> <p>Starting off your year with the <i>Inventor Inklings Unit</i> challenge not only gives you an opportunity to lay a foundation for communication and collaboration in your classroom, it also gives your students a chance to showcase their various strengths. Additionally, the design challenge is a good opportunity to introduce your class to (or both) of the main science topics for the year—biomimicry and/or communication—through the design or selection of a relevant challenge question.</p>