

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

**FLOW OF INSTRUCTION**

**K-2-ETS1-1**

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.

**K-2-ETS1-2**

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.

**K-2-ETS1-3**

Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

**1-LS1-1**

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.

**1-PS4-4**

Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.

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 (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)

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.

<b>Unit</b>	Inventor Inklings
<b>Grade Level</b>	Grade 1
<b>Price</b>	\$350 – Full Curriculum Unit

### Parts List

Component Name and Description	Approximate Cost	Source
<b>Printed materials</b>		
Educator Guide (1)		Electronic copies available on the unit website.
<i>My STEM Explorer Notes™</i> notebooks (30)	NA	Printed materials available through replacement kit purchase.
<b>Provided equipment and materials</b>		
Book of Ideas – Young Inventors Journal	\$180	Through CreositySpace
<i>The Most Magnificent Thing</i> by Ashley Spires	\$20	Amazon