Inventor’s Challenge

February 16th to March 11th, 2016

For more info visit: inventorschallenge.org #inventorschallenge
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What is Invention?

Invention is the act of creating new things or improving upon existing things.

The purpose of the Inventors’ Challenge is to inspire and empower youth to dream up their own new inventions that solve a problem in their schools or communities. An important idea we want to communicate through the Inventor’s Challenge is that invention is less an act of solitary genius and “aha” moments, and more an ongoing process involving collaboration, empathy towards problems and needs, and continuous iteration of (playing with) ideas.

This Inventor’s Challenge Playbook outlines pathways to better understand the process of invention, and provides some inspirational ideas to get you started.

The Inventor’s Challenge includes guidelines and rules for contest entry (and some cool prizes!), but we want to emphasize that this Challenge is not about winning, but about getting out there in your school and community and finding some problems to solve, being creative, and most of all, HAVING FUN!

“To invent, you need a good imagination and a pile of junk.”

—THOMAS A. EDISON
Pathways to Invention

There are numerous paths you can follow on the inventor’s journey.

In the next few pages, we’ll share some pathways to help get you started. Remember that the process can start at any point and can move back and forth between these “steps.” Feel free to organize this in the way that works best for you. Kids can work in small groups, pairs, individually, or in any combination of these. For example, it is often helpful for kids to sketch or write ideas in their own journals individually, before participating in collaborative sessions. But others might get inspired by tinkering with materials without having any clear idea in mind. Have tools, materials, and mentors on hand to support kids with positive feedback.
Find Inspiration and a Problem to Solve

Inspiration for inventions can come from anywhere. One place to start is to find a problem. Encourage youth to observe closely, talk to others in their community about challenges they observe, and to jot down ideas, even (and especially) crazy ones. Don’t worry if the idea seems too “small”—often an invention that addresses the needs of just one person can actually serve the needs of many. Youth can also think on a large scale—about inventions that can help solve a global problem. See the inspirational ideas on pages 8-11 for a jumping-off point.

CLOSE OBSERVATION - Find a site in the community, like a classroom or playground. Record how people use the space, and any difficulties they run into. Remember, no idea is too small!

TALK TO OTHERS - Interview community members to find out about everyday problems they confront that you may or may not notice.

CONSIDER EXISTING INVENTIONS - Think of the items people use every day — someone must have invented it (or a version of it) at some point. How and why? How could it be improved? Kids can bring in items from home that they think need to be improved.

USE A COMMON TOOL IN A NEW WAY - Think about the Little Mermaid who used a fork to brush her hair. Encourage youth to think outside the box about tools.

EXPLORE THE HISTORY OF INVENTIONS - Reading about the insights of others can inspire your own imagination.

Inventor’s Story: Lily Born, age 11, observed her surroundings closely and found a problem: her grandfather had Parkinson’s Disease, and because of tremors, had trouble holding his drinks steady and would often spill. This inspired Lily to invent the Kangaroo cup — a three-legged unbreakable, spill-proof cup. Lily wanted to help one person in her life, but her invention ended up being useful to countless!
Document, Share, and Get Feedback

It’s important for inventors to keep track of and share their ideas, progress, and projects. This not only helps them remember passing ideas, but also makes it easier to share with others and get feedback. Going back over things, in a journal for example, helps a person track their learning and come up with new ideas. There are many ways for kids to record their inspirations and ideas. Make lists, take pictures, write down the ideas from others, sketch and draw pictures, etc.

BRAINSTORM - Kids individually list every idea that comes to mind regarding a problem or challenge.

BRAINSWARMING - This is a more quiet form of ideation that some researchers argue is more creative and less likely to follow a dominant pathway. Take a look at this article in Forbes magazine, and helpful video.

SKETCH AND/OR WRITE IDEAS - Provide lots of paper, notebooks, and digital resources for youth to work out their ideas visually.

TALK TO THE PEOPLE YOU’RE MAKING THE INVENTION FOR - Youth get feedback on ideas from the people who would likely benefit from the invention.

CONTINUE TO DOCUMENT – Youth continue to capture their process. And their documentation can be useful for their contest entry!

Inventor’s Story: While playing around with mini computers, Quin Etnyre came up with different computational sensors that he could use for fun projects. He now sells his inventions and learning kits at his website Qtechknow.com and teaches classes for people of all ages who are interested in learning how to make interactive projects from Quin.
Prototype, Make Mistakes, Iterate, and Play

Time to build! If at first you don’t succeed, try, try again! Sometimes effective building happens after exhaustive ideation and/or planning, and sometimes it starts without any ideas at all. Have youth keep track of their ideas and trial runs. Building is also about play and iteration, so have fun and let your inventions change, or mash up with others. And invite others for whom the invention is made to come and play too. This is a chance to figure out what’s working and what isn’t.

**PROTOTYPE** - Build a model of the invention with cardboard or other material helpful for prototyping. It doesn’t have to be fully functional yet!

**MAKE MISTAKES** - Some inventions seem like failures at first. Some arise by accident. Look carefully at the steps in your process and reflect on them, because that’s how we best learn. Even if steps seem like a “mistake,” reflection will generate new and better ideas.

**ITERATE** - It’s never perfect the first time. Try lots of different versions! Prototyping helps save time during this process.

**PLAY** - Playing around with materials can help inspire ideas. Playing with prototypes or a working model can help find strengths and weaknesses.

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**Inventor’s Story:** Many inventions came from mistakes, or were unintentional. The first Popsicle was invented by accident in the winter of 1905 when 11-year-old Frank Epperson left a mixture of powdered soda and water, along with a stirring stick, outside in the cold overnight. It froze and became a delicious treat. Epperson went through iterations: at first he called his invention the “Eppsicle,” but later changed it to “Popsicle.” He also experimented with different flavors.
Inspirations

So many places to start! This section lists lots of inspirational ideas and domains for invention to take place. You may want to choose only one of these themes, or provide the whole list to kids. Each question provides just a starting point, and any of them can be deepened into longer journeys.

Can you invent...

- a safer knife?
- a better lunch box?
- a new way for storing books?
- a sustainable fashion line?
- the perfect alarm clock?
- a more fun jump rope?
- a candy storage outside of your siblings’ reach?
- a fun way to package chocolate?
Inventions to Help your School

Can you invent...

- a way to make crossing the street safer?
- a way to make it easier to carry books between classes?
- a fun way of using technology for learning?
- a new locker system?
- a better storage system for your classroom or Imagination Chapter?
- a more functional desk?
Inventions to Make People Happy

Can you invent...

- A new sport?
- A movie script and a garage production?
- A new piece of playground equipment?
- An interactive public art piece?
- A roller-coaster ride?
- A new game?
Inventions to Improve Your Life

Can you invent...

- A better hospital stay?
- Something that reduces the use of plastic bags in grocery stores?
- Way to make your daily school bus ride less bumpy?
- A way to make daily exercise more fun?
- A way to help senior citizens in your community?
- A pet-friendly park?
How to Get Involved

The following pages provide all the information you need to help you plan and run an Inventors’ Challenge, including the submission process for the contest.

SUGGESTED MATERIALS

CHECKLIST

HOW TO ENTER THE CONTEST

PRIZES AND JUDGING
Suggested Materials

Here are some suggestions, but feel free to use other materials you like. We encourage you to use what you have lying around the house or to ask neighbors and businesses to donate leftover scraps and materials. Re-use and recycle whenever you can. If you start early, you’ll be surprised by how many materials you can collect for free.

Cardboard

Used cardboard boxes (big & medium size)
Cereal boxes
Shoeboxes

Reused / Reclaimed

Empty containers of strawberries/fruit
Empty bottles and bottle caps
Egg cartons
Milk cartons
Paper towel and toilet paper tubes
Old fabric, pillowcases or clothes cut into scraps
Old stuffed animals and toys

Toy Store / Home

Sports or bouncy balls of various sizes
Various (dollar) toy prizes
Old action figures
Home or school items to improve (with permission)

Office Supplies / 99 Cent / Art Store

Various kinds of tape
Scissors, box cutters (for older kids or parents)
Markers and pencils
Tempera paint and brushes
Decorations (sequins, googly eyes, confetti, etc.)
Popsicle sticks
S-hooks, staplers
Assorted paper and/or card stock
Brown paper bags
Bottles of glue, glue sticks, low-temp hot glue (for older kids or parents)
Computers (the invention can be digital too!)

Documentation Aids

Notebooks
Cameras (e.g., in smartphones, tablets, or iPods)
Egg cartons to hold phones or tablets
Lenses to attach to smartphone cameras
Puppets to interview youth about their invention.
Good lighting
Monochrome backdrop
Computer with internet to upload and submit videos
**Checklist**

*A handy checklist to help with planning.*

**Before the Challenge**

- Figure out the scale of your Challenge: Is it a few kids, or many kids? Is it over many days or just one?
- Register your challenge at inventorschallenge.org
- Are you going to have a showcase of final inventions? Make sure you get the word out
- Secure a location
- Find a storage area and collect cardboard and other materials (from home, local businesses, etc.)
- Contact local sponsors for supplies & donations (used card board, food, prizes, arts materials)
- Ensure you have appropriate tools to take video (video camera/ smart phone, good lighting)
- Ensure you have an account set up on a video site like YouTube

**During the Challenge**

- Begin challenge on or after February 16, 2016
- Creativity starts with inspiration, so think of experiences that will get kids inspired
- Provide space and materials for building multiple prototypes and iterations
- Encourage youth to document their process every step of the way, either by writing, taking pictures, or video
- Set aside adequate time before the deadline to make videos of the selected invention(s) for entry into the contest (See “How to Enter the Contest” for details)
- Submit your videos by March 11, 2016 (See “How to Enter the Contest” for details)

**After the Challenge**

- Reuse or recycle leftover materials. Visit search: earth911.com
- Share photos, video and stories online with #inventorschallenge & #ATTimpact
- Explore other chapters’ invention videos
- If you want, you can host a showcase to celebrate all of your kids’ inventions, and invite the wider community to participate
How to Enter
the Contest

The 2016 Inventors’ Challenge runs from Tuesday, February 16 through Friday, March 11 at 11:59pm PST. Remember to register and to upload and send your video(s) during this time!

So, you have a room full of new inventions! It’s time to share them with the wider world. This section provides information on how to create and submit a video. Videos will be added to Imagination Foundation’s 2016 Inventor’s Challenge YouTube Playlist!

- Register your challenge at inventorschallenge.org
- Choose one invention you want to showcase in each video
- Tips on what to include in your video:
  - What’s the name of your invention?
  - What problem does it solve?
  - What does your invention do?
  - What inspired you to create your invention?
  - Who does your invention help?
  - Did you run into any challenges? How did you overcome them?
  - Share your ideas, sketches, and prototypes.
- Recommended length: 3 minutes or less (but whatever it takes to realize your vision!)
- Set the video in a quiet location with good lighting and a non-distracting background
- Mention the Inventor’s Challenge, Imagination Foundation and AT&T Aspire in your video
- Upload your video to YouTube and send an email to hello@imagination.is with “2016 Inventor’s Challenge Contest Submission” in the subject line with a link to your video on YouTube by Friday, March 11, 2016
- In the YouTube description section, include a short blurb about your invention, mention Imagination Foundation and AT&T Aspire, and include the URL inventorschallenge.org (You can also include links to blog posts, your organization’s website/facebook, etc. in this section)
- Video must be your own original work
- Be sure to read the official rules here for additional details
Prizes

Up to three projects will receive special prizes from AT&T that could include tablets, accessories, or a visit to AT&T to showcase your invention.

Judges will look for the following things:

- Originality: An original invention is unique among the entries, and, in fact, may be something the judges have never seen before at all!

- Level of inspiration: An “inspired” invention springs from an interesting source, such as a problem that it can help to solve. It has the potential to make a real difference!

- Overall creativity: A creative invention is both novel, original and useful. The judges will also look for creativity in the video presentation as part of this category.

Judging will be conducted by a panel of Imagination Foundation and AT&T employees. The Panel will evaluate all valid entries and pick a first place, a second place, and a third place winner.
Good luck and happy inventing!