



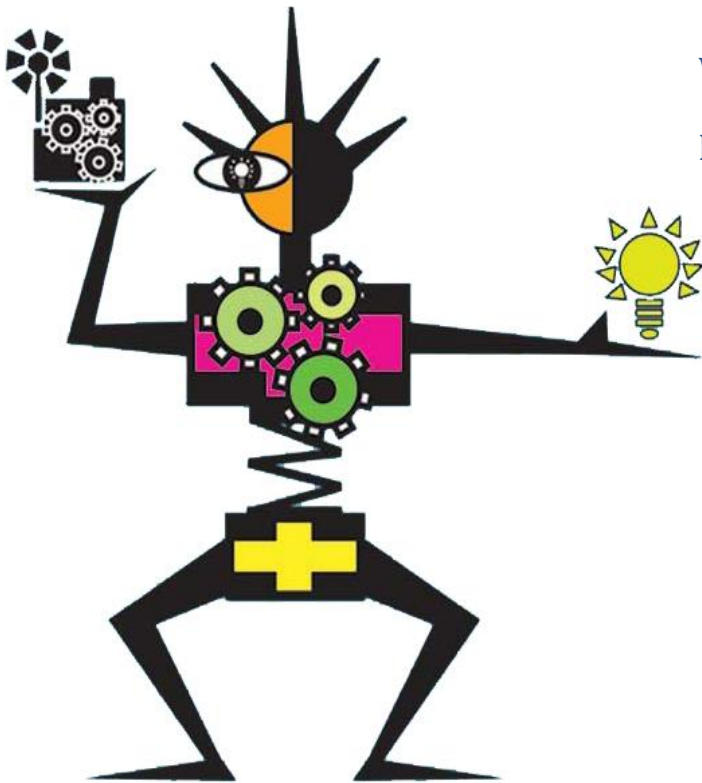
LATEST - GREATEST INVENTOR

LESSON PLAN

INDUSTRY: _____

*Inventing your way to...*_____

(i.e. ...a cleaner world ...healthier world ...renewable energy, safety, etc.)



WOULD YOU LIKE TO BE THE...

LATEST - GREATEST INVENTOR?

Definition of:
(your industry)

Now that you have decided on an industry it's time to do a little research. Find two inventions that you feel have had a significant impact on your chosen industry. When and where were they invented and by who? What problem did they solve?



INVENTION #1 NAME:

Date of Invention:

Inventor's Name:

Country of Origin:

Original Problem:

Description of Invention:

Where did you find this information:

INVENTION #2 NAME:

Date of Invention:

Inventor's Name:

Country of Origin:

Original Problem:

Description of Invention:

Where did you find this information:

These won't be the last great inventions...

The next latest greatest invention is waiting to be created!

Within every industry there will be many ways an inventor can contribute (i.e. improve functionality, design or delivery, create new devices, create new uses, etc.) What are some of the key ways an inventor might contribute to your chosen industry?

1)

2)

3)

4)

5)

Before you get started looking for a clever idea, let's talk about inventing!

Inventors invent by following certain basic steps – just like many other things you do every day. Like following a recipe while cooking, brushing your teeth or tying your shoes – inventing is a process.

To help you get started with YOUR invention – just follow the steps beginning on the next page!

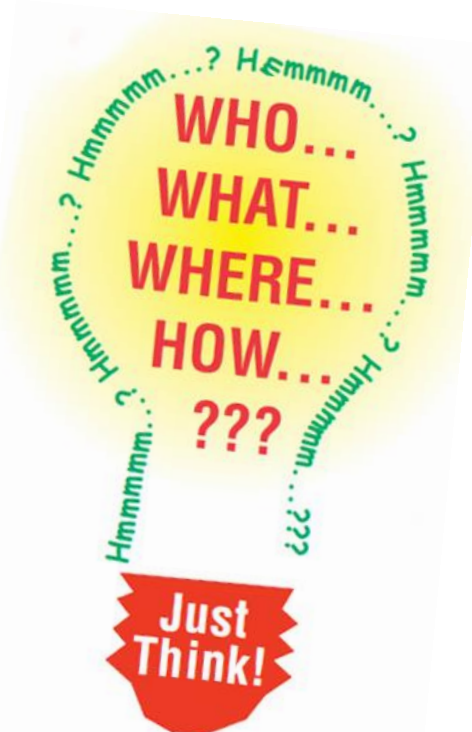
FIRST – JUST THINK!!



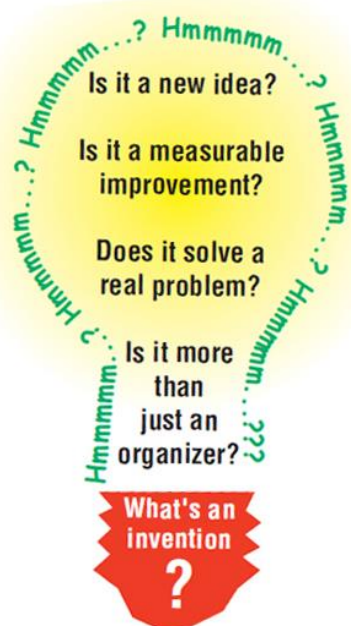
The best way to come up with a clever idea or plan is to BRAINSTORM! Brainstorming is thinking up lots of ideas. When you brainstorm for an invention – you think of everything you possibly can about what problems there are, who has them, how to resolve them...just everything that enters your mind. Don't worry about every detail – just write down your ideas. You can figure out the "how" and "what" later.

You can start by asking yourself the following questions (remember to write down the answers in your journal):

- ❓ What are some problems you have noticed that impact the industry?
- ❓ What problems have you seen reported in the news? Learned in school?
- ❓ What about your friends, grandparents, teachers? Ask them to share problems they have noticed.



Now that you're thinking about your industry....brainstorming all kinds of ideas...remember to pick a problem you think you can solve - and that fits this program's requirements. Here is some information that will help you understand the basic requirements:



1. You'll need to **BUILD** a prototype....not just have an idea...or draw a picture...or conceptualize a system. This is a “Gadget”, “Model”, “Functional THING” program/competition.
2. Your idea does need to **SOLVE** something...even though some inventions are just plain FUN. We're looking for **SOLUTIONS** that have a measureable impact on the world.
3. Every inventor **DOES THEIR RESEARCH** on the problem: Who has the problem? What may have already been started to solve this problem? How is the problem measured? How could the impact of the solution(s) be measured?
4. Every inventor puts time in **COMMUNICATING** their journey. A solution is only as good as its ability to “GET REAL”....and that only happens if you take the idea out of your head...and successfully transfer it to others. Your *Student Journal* allows you to create a documented record of your invention from start to finish and provides you an effective way to communicate your idea to others.

While you were deciding on a “problem” and thinking about the basic requirements, were you already beginning to think about some possible solutions?

Use the SCAMPER technique to brainstorm! Take your idea – then SCAMPER!

Substitute – What else could you do instead? Could you use other materials?

Combine – How about a blend of two or more ideas/processes?

Adapt – What is there already that helps with this problem? Can you make it better?

Minify – Order, form, shape? Could you make it smaller? Miniature? Portable?

Magnify – Greater frequency? Bigger? Longer? Add something?

Put to other uses – How else could it be used? Or where? With who?

Eliminate – What can you get rid of? Subtract? Condense?

Reverse – Will it work backwards, inside out, upside down?



These are all important things to think about when getting ready to make your invention. There really is a lot to think about – but just like anything else worth doing – if you just **GET STARTED** you'll soon be on your way to becoming the an **INVENTOR!**

SECOND – JUST DESIGN!!

Once you have decided on your favorite idea – it is time to start designing YOUR invention. Start by defining the PIECES AND PARTS you will need to actually make it. You will need to think about what it will look like, how you will use it, does it need directions – all the things that will help others know what your invention is all about, so they can use it and help others learn how.

Here are a few questions to answer to get you started:

- ❓ Is it like anything you already know about? How is your idea different?
- ❓ What are some names your invention might be called?
- ❓ How will you use it? Who uses it?
- ❓ What might it look like?
- ❓ How will it operate?
- ❓ When would it be used? Night or day? Warm weather or cold?
- ❓ How many people can use it at one time? One, many, both?
- ❓ Does your invention need directions or instructions? What are they?
- ❓ What problem/challenge does your invention help solve? How?
- ❓ What materials will you need to make it? Do you have the materials you need already? Where will you find them?
- ❓ Is the invention simple? Cost effective? Durable?
- ❓ Will you need help? What kind of help will you need?



You can draw or sketch your idea or simply describe it in your inventor's journal. And if you need to, you can make up a set of directions. Don't worry - this is easier than it sounds. Remember - this is YOUR idea – so you just have to explain what is in your brain. Write down everything people will need to know – and that's all it takes!



THIRD – JUST BELIEVE AND BUILD IT!!

Now – you need to actually make your idea into a prototype or a working model, so you can see what it really looks like and show how it really helps to solve the problem. Remember, try to keep it simple, cost effective and durable.

IDEA + BELIEVE = SUCCESS!

YOU CAN DO THIS! Your brilliant idea has come to life on paper – now **JUST BELIEVE AND BUILD IT!**

Don't forget the first thing you should do EVERY DAY and EVERY STEP OF THE WAY is write down what you've done in your journal. Include the improvements, changes, trials and errors, including the dates you made them. Record your changes, and initial and date them.



Your prototype should be:

A model or representation of how your invention would work if it were real and should be:

- Able to adequately illustrate to those learning about it how it would work if real.
- No larger than 2 feet deep X 3 feet wide X 4 feet high.
- Able to run on batteries – if there is a power source needed at all.

Your prototype may not:

- Utilize electricity AT THE FINAL COMPETITION (there is no AC provided/allowed at IC)
- Be larger than stated requirements.

Once you have built your prototype – TRY IT OUT!

YOUR invention may be perfect the way it is - but it's OKAY if you want to change it - fix it - make it better! Inventors rarely get it right the very first try...sometimes an inventor may build many prototypes before they are satisfied with their creation.

The most known example is Thomas Edison's light bulb. How he had an idea...tried it...but had to believe in it enough to suffer over 1,000 "failed" tries - before it worked! What got Thomas Edison through it?

HE BELIEVED!

HE BELIEVED HIS LIGHT BULB WOULD WORK!

HE BELIEVED IN HIS ABILITY TO MAKE IT WORK!

AND - HE NEVER GAVE UP!


IDEA + BELIEVE = 

How do you know if your prototype is ready?

Here are a few questions that will help you to decide:

- ❓ Does MY invention work the way I want it to? Can I make changes to make it simpler to operate? Make it to work better?
- ❓ Does it look the way I want it to? What can I do to improve the way it looks?
- ❓ Is it durable? Are there other materials I can use to make it more durable?
- ❓ Can I enhance it in any way? Make it larger or smaller? Portable? Waterproof?
- ❓ Remember the SCAMMPER technique of brainstorming? Look back at SCAMMPER questions covered earlier in this lesson to see if there are more helpful questions.

If you decide to make changes make sure to record your changes (failures and successes) in your journal.




Experiment...

Pick one of your ideas, and think about how to make it happen. Write down the steps, and what you think will happen. Then try it. Maybe it will work...and maybe it won't. If not, don't give up - try it another way. Remember: Thomas Edison made hundreds of bulbs before he got one to light up!

First Try...

IDEA #1
What happened when you tried your 1st idea out?
How well did it work?
What did not work?
How can you make it better? (List 5 improvements)
1. 2. 3. 4. 5.
Great Job! Now lets try another one of your ideas.


4

Once you have finished your prototype, make sure you congratulate yourself for bringing your idea to life and for a job well done!

YOU ARE THE LATEST - GREATEST INVENTOR!