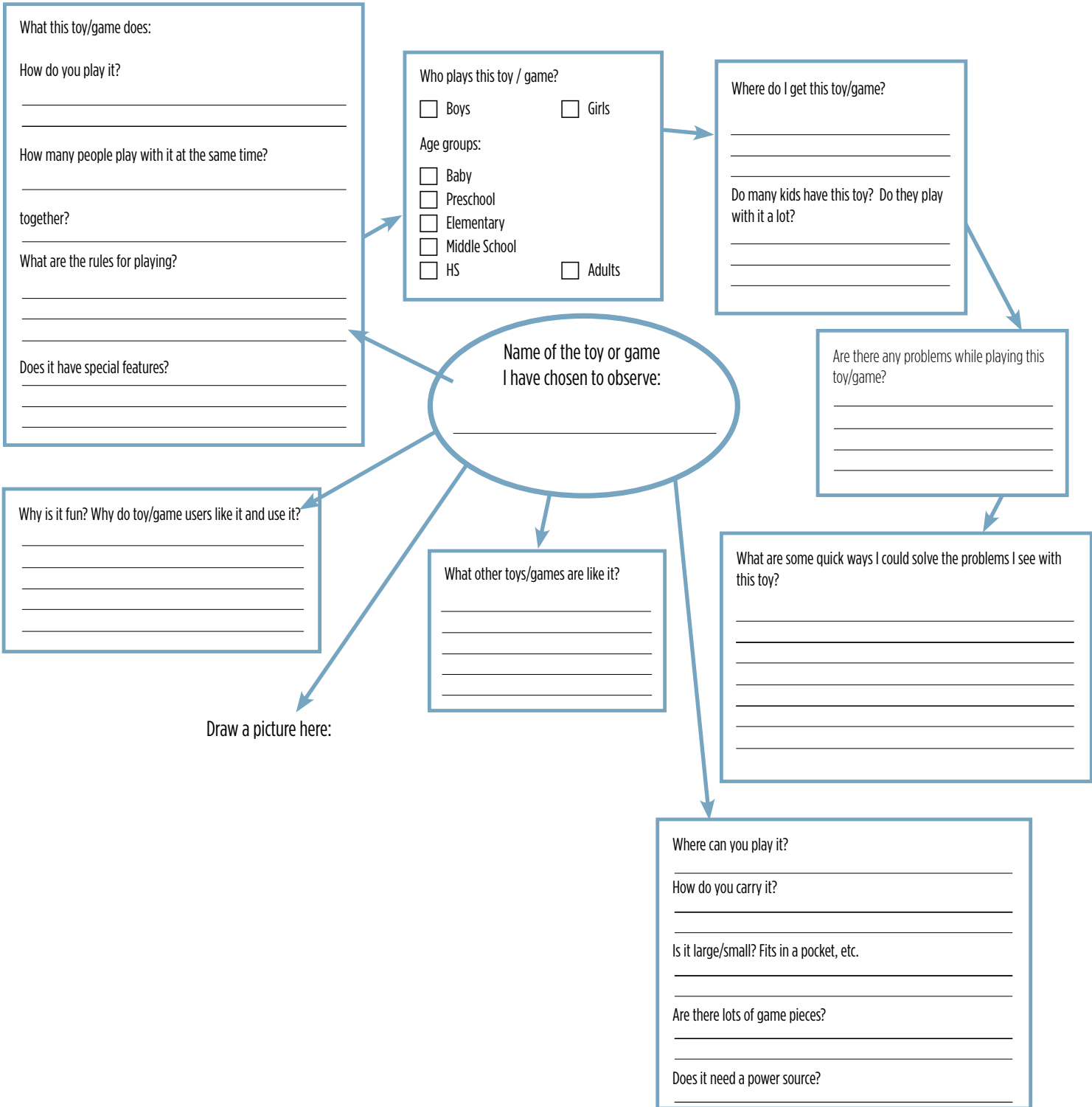


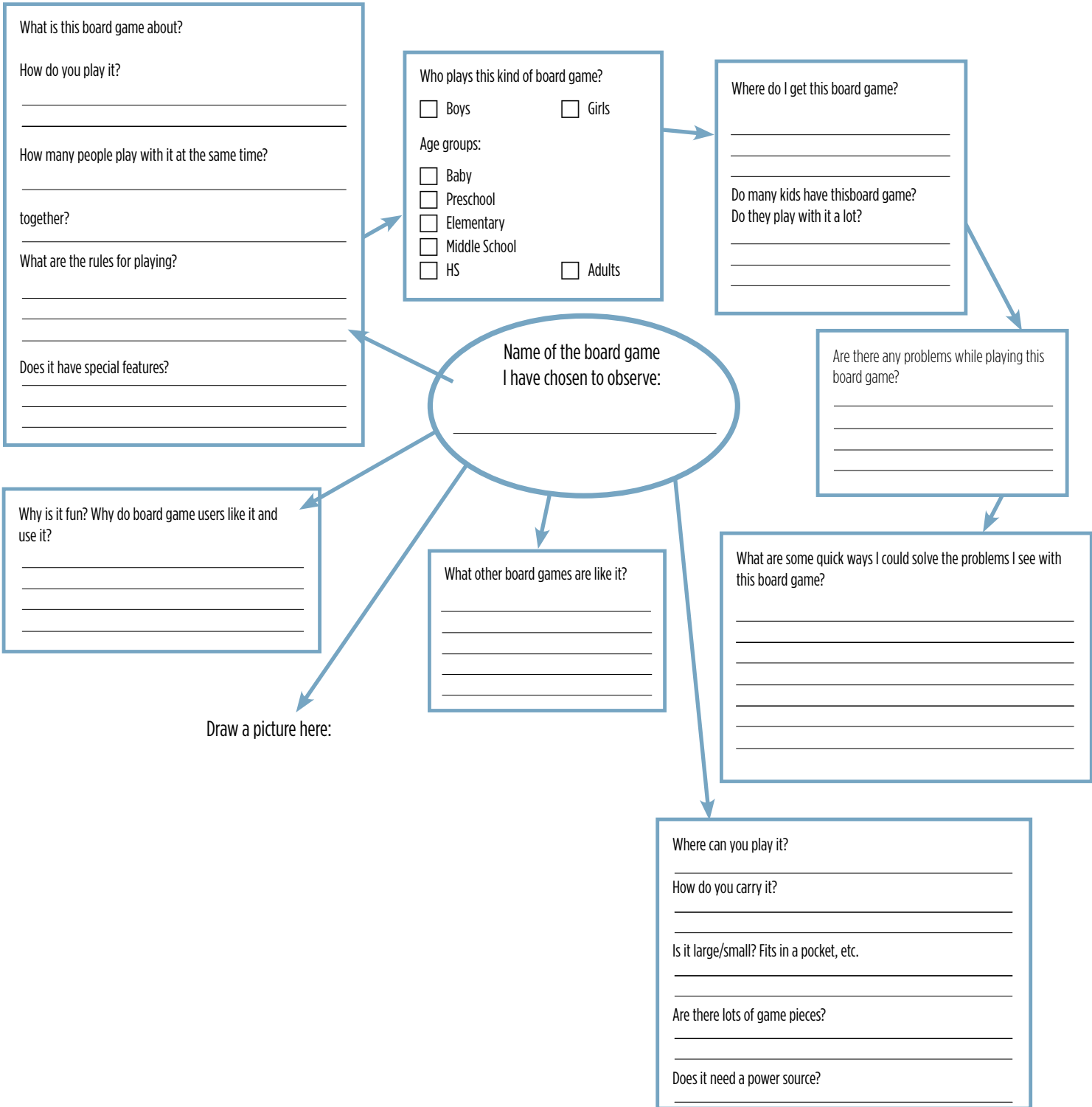


### Mindmapping My Observations - Toy/Games



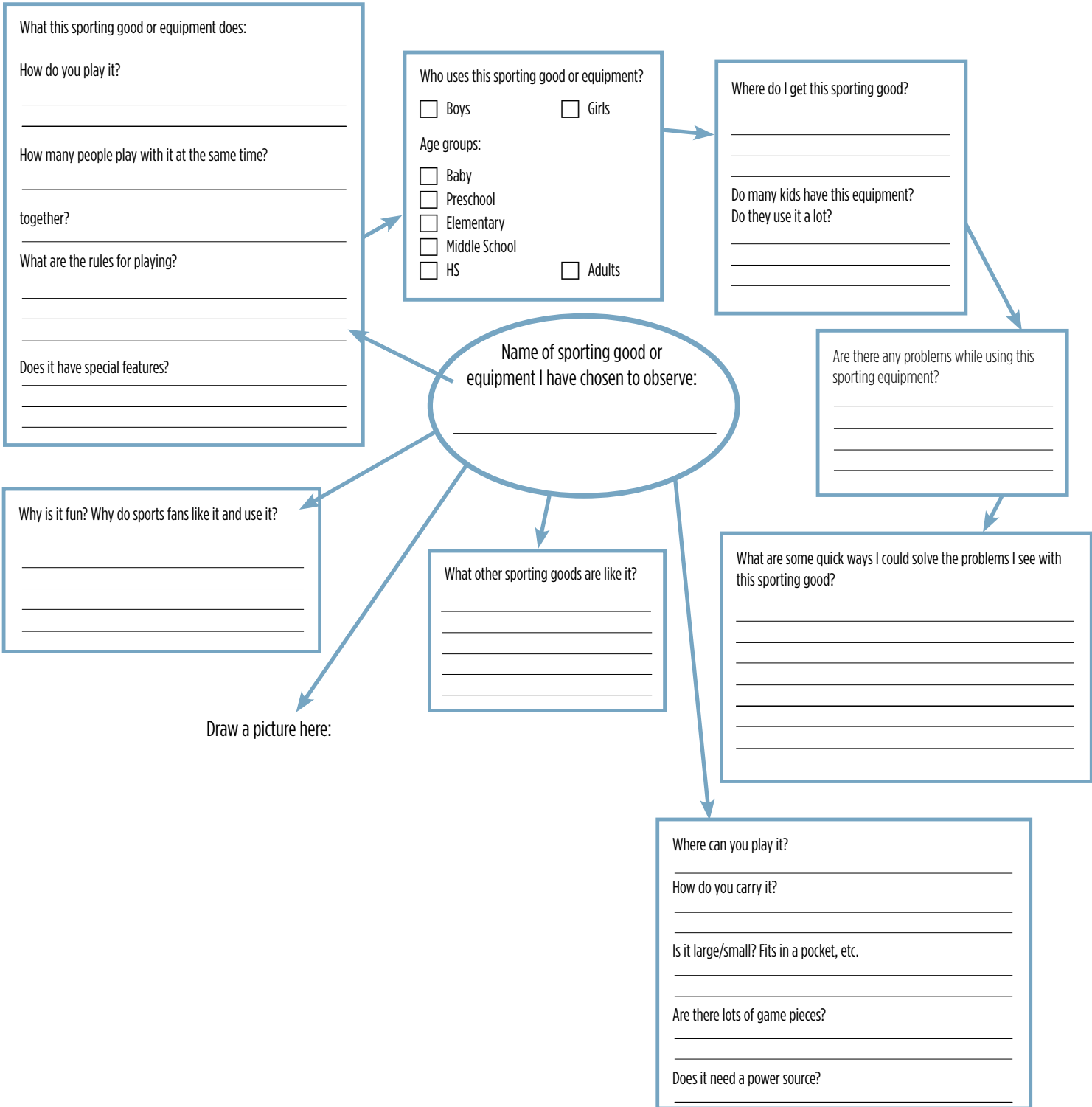


### Mindmapping My Observations - Board Games





### Mindmapping My Observations - Sporting Goods





## Recording My Observations

Fold this page into four so it fits into your pocket. Carry it with you for a week, especially while you are playing with toys and games. Observe what you do and notice when you or other kids around you struggle. Make sure you have a pen and write down any problems you see or experience. Then, think about how you would solve each problem. You can take notes, draw pictures or do both.

You can also go to the library or on line and identify a global issue or a remote issue in another hemisphere. Use this sheet to organize your initial research.

Fold on this line

<p>Problem #1</p>          <p>Solution</p>	<p>Problem #2</p>          <p>Solution</p>
<p>Problem #3</p>          <p>Solution</p>	<p>Problem #4</p>          <p>Solution</p>



### Identifying Issues

Use this Brainsheet to begin to work on the idea that will eventually turn into your invention. Brainsheet #2: Observations should have provided you with several ideas from your own or your friends' experiences. An inventor buddy or coach can help you think about your solutions.

The Toy / Game / Sporting Good problem I found:

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The Solution I thought up to solve this problem: (write or draw it here):

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I shared this with my buddy/coach and together we worked on some other solutions to this problem:

Solutions:	Reasons this is a good idea:	Reasons this is a bad idea:
1.		
2.		
3.		
4.		

Out of the above list, I pick the following solution and this is my invention idea for a Toy / Game / Sporting Good:

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## I Refine My Solution

Use this Brainsheet with your friends or teammates to help you take your solution/idea to the next stage!

My idea / solution:	
Problem I have identified that this idea solves:	
What will I need to know in order to solve this problem:	
If I wanted to build a model of my invention What materials will I need to create my model?	
What equipment will I need to use in order to make my model?	
What steps will I have to take to invent my model?	
What problems could come up?	
Who will be my invention coach or buddy? What can they do to help me?	



## Did Anyone Invent this Invention Before Me?

Before you get too far along with your idea, innovation or product, it makes good sense to make sure that no one has thought of something like it before. You can search for similar ideas either at the U.S. Patent Office's website or through google. First of all you need to come up with words that describe your idea.

### Words to Use on your Search

What is your invention or innovation about? What words would you use to describe your idea? Using the answers to these two questions, generate 5 keywords that relate to your inventive idea:

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### 1/ U.S. Patent Office Search

To do your research, you can start by visiting the U.S. Patent Office online and searching their patent database. The URL is: <http://www.uspto.gov/patft/> . Once you have found the site, go to "Quick Search."

When you arrive at the search page you will see that on the left, you can enter two different search words. On the right, there are pull-down menus that show what part of the patent text you would like to search. Unless you are searching for a very specific term, select "Title" from both pull-down menus. Type in your search words, then click "search."

Try different combinations of keywords, two at a time. What patents do you find? Do any of them resemble your idea? List the names of similar inventions you have found below:

---

### 2/ Google Search Tool

An even easier search tool has now been invented at Google. Go to <http://www.google.com/patents> and type in your keywords. There are also some miniature samples on the landing page. These are fun to see as examples. Once you find your abstract, there is a link to the USPTO for a more refined search.

Type your keywords into the search field. Try different combinations of keywords, two at a time. What patents do you find? Do any of them resemble your idea? List the names of similar inventions you have found below:

---

### SAMPLE Search: Finding and using keywords

Let's suppose you are concerned about the plastic that is wasted when people purchase disposable water bottles. You think it would be better for the environment if people just reused a bottle and filled it with tap water. You have thought of a device that would snap in like a filter and let you filter the water just before you drink it.

So you would type "water filter" in the USPTO site and in Field 2 you might type "single bottle".

On the Google site, you just type all of the words into the main search field. Try typing this in the search field: "water filter in water bottles". This will pop up: <http://www.google.com/patents?id=VbMfAAAAEBAJ&dq=water+filter+in+water+bottles>

You will find a list of similar patents on the left. To get different kinds of results, change the view as option to thumbnails. You will see pictures and sketches of things that were invented before. This will help you determine if you have a new idea. There is also an advanced search option on the Google site as well. Click on the right of the landing page.

If you find that someone already invented your idea, don't feel discouraged! You can change, modify and build on the idea until it is novel enough to be patented. Ideas typically build on each other. Just look at the list under the first search. You are on the right track. Can you take it to the next step?



### What Will My Invention Look Like?

In order to depict you invention, first collect colored pencils, pens, markers and a ruler/protractor. Feel free to use any other tools to help you draw.

Use this Brainsheet to help you share what your invention looks like. Is it large or small? What are its measurements? Does it have sharp angles or is it bumpy or wavy? Is it soft or hard? Will it be used by kids or grown-ups, or both? Is it made of metal, wood, plastic, fabric, or some other material? Think about these questions, then use the space below to draw four different views of your invention: 1) from the top, 2) from the bottom, 3) from the left side, and 4) from the right side.

<p><b>View from TOP</b></p>	<p><b>View from BOTTOM</b></p>
<p><b>View from LEFT</b></p>	<p><b>View from RIGHT</b></p>



S-C-A-M-P-E-R

Fill in each box using this technique to refine / make your invention better, change it, make it more unusual, or just to test different approaches.

My Invention:	Now what did you invent?
Substitute: What else can it do? How can I change it to do that? What other material can I use?	
Combine: How can I combine this with another object or purpose?	
Adapt: What else is like this? What could I copy and add to it? How can I change it?	
Minify/Magnify: How can I make it smaller, bigger? How can I simplify it or instead, make it more challenging?	
Put to other uses: New ways to use the item? Other places to use it?	
Eliminate: What to subtract? Condense?	
Rearrange/Reverse: interchange components? Turn it backward? Upside down?	

Now look over your changes and decide which one(s) you will incorporate into your invention. Explain in more detail here:

\_\_\_\_\_



## Time to Name My Invention

There are lots of ways to find a name for your product.

Look for similar products on the market and take note of their names. Visit a toy or a sporting goods store. Go over to the closet where you keep your toys or games and check out some of their names. Watch commercials on TV. Take your journal with you and write down some of the names you come across.

Now, think about what your invention does. What are some of the parts of your product? What does it look like? You can name it after yourself, or your initials. Read some of these naming ideas below, then try it yourself!

### Name it for what it does

**Zach Levins** invented a fast-paced, multi-player board game that tests the players' memories by asking them to repeat whatever was said or done by other players, and named it "**Repeat or You're Obsolete**".

**Richie Stachowski** named his invention "**Water Talkies**" because the megaphone-like underwater device is used to communicate with his friends. It is a play on words that tell that you are talking under water.

*HINT: Play with the words until you find a catchy way to put them together.*

Write what your product does:

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Try naming your invention for what it does

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### Name it for its parts.

**Amber Flagg** named her invention the "**Cooling Vest Pack**", which describes the ice pack that is inserted into the vest to cool people down when they are outdoors.

*HINT: Play with the words until you find a way to put them together to make a two-, or three-word name.*

Write the parts of your product:

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Combine these words to make a name for your product:

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## Time to Name My Invention

### Name it after yourself

**Braille**, a method that is widely used by blind people to read and write, was named after **Louis Braille**.

**The Jane Goodall Institute** was named after the founder who was famous for studying and working to save gorillas.

Write your first and last name here:

Use your name to name your product or solution here:

Write your initials here:

Can you use your initials to make a name for your product?

### Name it with rap rhyming or repeating sounds

**“Battie Caddie”** is the name of the **Austin Meggitt’s** device to carry a ball, bat and glove on a bicycle.

**Matthew and Justin** named their invention **“FLIP-ITZ”** partly because that’s what the plastic pieces do and partly because it is a fun name.

Using the names you thought of above, pick some rhyming sounds and write them here:

Now pick some of the rhyming sounds and combine them into a catchy name.

Write that name here:

Practice saying some of the names you have created. You can use Brainsheet 9: What’s In a Name? to survey your friends and family to see which name they like best for your product. Do some “market research” to see which name catches people’s attention. People buy the “brand” they remember. Most importantly, find out which name they remember most - that is the one to use!

Based on all these naming exercises my favorite name for my invention is: \_\_\_\_\_



### Market Research

Use this chart to help you survey your friends and family to see which name they like best for your invention. This is called "market research". People who want to sell a product or idea choose a name that people will remember. So, it should to catch people's attention because people tend to buy the "brand" they remember.

Use this survey to see which name they choose from the top three names you like. Go back to the people you chose to ask and see which name they remember. Then count up the ones that got the most votes - these are the names you should consider using!

Who is your "market"? Who do you think will buy your invention? Is it people your age? Will they buy it themselves or will the parents be making the decision to buy it for them? Find parents (yours will work fine) and grandparents or guardians that you can "survey". Find people close in age to those you believe will enjoy your toy, game, or sports product. Also, survey whoever you think would buy your invention.

Write a short description / explain what your invention does:

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Write your top three potential names for it here:

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Show the people you survey the names in the box and ask them to tell you their favorite name. If you have a drawing, you can also show it to them. Important! Usually, inventors get a person to sign a paper that says they won't take the idea for their own. It is called a "Non-Disclosure Agreement". So, you should only ask people you trust to help you with market research. To find out which name "sticks" in their minds, go back to each person a second time the next day, see which name they remember and jot down that name.

Name of person you survey	Favorite name on Day 1	Name they remembered on Day 2

Now look at your chart and see how many people picked and remembered one name. If it isn't clear from your chart, do more market research until you find the right name.

If that still doesn't work, go back to Brainsheet# 8 again to help you come up with a new name.

My invention's final name is:

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## Alignment to National Standards

### **NT.K-12.3 TECHNOLOGY PRODUCTIVITY TOOLS**

Students use technology tools to enhance learning, increase productivity, and promote creativity.

Students use productivity tools to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works

[http://www.education-world.com/standards/national/technology/k\\_12.shtml](http://www.education-world.com/standards/national/technology/k_12.shtml)

### **NT.K-12.5 TECHNOLOGY RESEARCH TOOLS**

Students use technology to locate, evaluate, and collect information from a variety of sources.

Students use technology tools to process data and report results.

Students evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks.

### **NT.K-12.6 TECHNOLOGY PROBLEM-SOLVING AND DECISION-MAKING TOOLS**

Students use technology resources for solving problems and making informed decisions.

Students employ technology in the development of strategies for solving problems in the real world.

[http://www.education-world.com/standards/national/technology/k\\_12.shtml](http://www.education-world.com/standards/national/technology/k_12.shtml)



S-C-A-M-P-E-R

Fill in each box using this technique to refine / make your invention better, change it, make it more unusual, or just to test different approaches.

My Invention:	Now what did you invent?
Substitute: What else can it do? How can I change it to do that? What other material can I use?	Find chocolate chip cookies that are low fat. Find some that use other chip types like peanut butter.
Combine: How can I combine this with another object or purpose?	Make an ice cream sandwich from two chocolate cookies. Make a chocolate chip cookie sandwich with chocolate or peanut butter inside.
Adapt: What else is like this? What could I copy and add to it? How can I change it?	Get some chocolate chip granola bars.
Minify/Magnify: How can I make it smaller, bigger? How can I simplify it or instead, make it more challenging?	Get a bag of mini-chocolate chip cookies. Get a big chocolate chip cookie that is used as a cake. Find these cookies in different shapes like long bars.
Put to other uses: New ways to use the item? Other places to use it?	Put chocolate chip cookie dough into ice cream. Add chocolate chip cookies to a slurry. Crumble them up to top a sundae or pudding.
Eliminate: What to subtract? Condense?	Eliminate fat; take away the nuts, etc.
Rearrange/Reverse: interchange components? Turn it backward? Upside down?	Make a chocolate chip cookie that is chocolate cookie with vanilla chips. Use chocolate chip cookies as a pie crust. Show chocolate covered-chocolate chip cookies - some could be made without the chips inside and with a layer of chocolate around them instead.

Now look over your changes and decide which one(s) you will incorporate into your invention. Explain in more detail here:

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