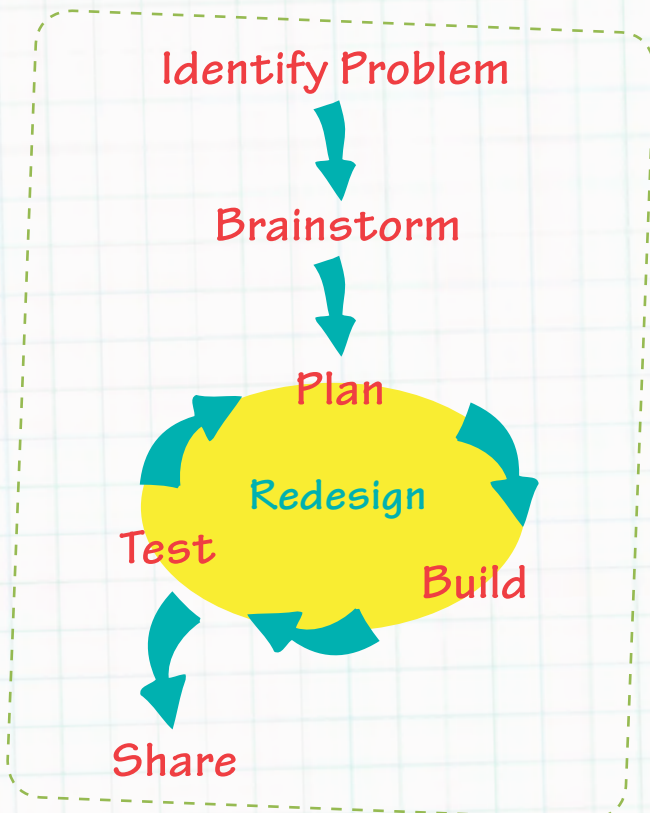


# Think, Plan, Build!

## Engineering Design Process

Here is the **SciGirls'** engineering design process, the same steps that every engineer goes through when tackling a new problem. Encourage your girls to follow these steps as they approach each **SciGirls Challenge** in this activity booklet.



**Plan** Each group must reach a consensus and choose *one* idea. Then they can use their math and science know-how to make a plan of attack, sketch a design, and identify the appropriate materials.

**Build** Girls should always start small by making a model or prototype and building one piece of the design before tackling the whole project.

**Test** After each test, girls need to evaluate their results. A failed test can still be a great test! There is something to learn from every experiment.

**Redesign** The design process is circular. After one cycle, girls may need to modify their original idea, revise their plan, and build and test again until they are ready to share their work.

**Share** Girls can learn from others by sharing their observations and results with each other, their parents, or on the **SciGirls** website. Learning is not a competition; it's a collaboration.

**Identify Problem** In our activities, the **SciGirls Challenge** lays out the goal, but girls should also discuss constraints they may have (e.g., supplies, time, and tools).

**Brainstorm** Girls can generate ideas by looking at other comparable designs or models, consulting experts, researching in books or on the Internet, or talking with one another.



Throughout this guide, the projector points you to videos on the companion DVD. Or you can watch online at [pbs.org/teachers/scigirls](http://pbs.org/teachers/scigirls).