



# Keep Out! - Designing a Latch

By: Michelle Bouslog

EdTech teacher; M.A.Ed. in EdTech, Concordia University St. Paul, MN

Science  
Grades 3–5



## Introduction

Do you ever wish your little sister would stay out of your room? This lesson will give you the opportunity to apply your scientific ideas to design a latch to keep your door shut!

## Learning Objectives

[3-PS2-4](#). Define a simple design problem that can be solved by applying scientific ideas about magnets.

## Materials Needed

- Magnets for every student
- Tape
- Rubber bands
- Glue and other makerspace items

## Procedure

1. Ask students if they have ever wanted a room where their door stayed shut (or what if their door wouldn't stay shut, how would that make them feel and what could they do about it). Tell them today they are going to brainstorm, sketch, and design a latch to keep a door closed!
2. Show students a picture of (or the actual thing, if possible) a latch board such as the [Melissa and Doug Latch Board](#). Ask them what they notice about the board. Tell them that there are many different ways to keep doors and windows shut.
3. Take a walk around the school and look at different latches (window latches, door latches, etc.). You may also show students pictures of ideas using a simple Google search.
4. Bring the students back to the room and have them return to their seats to start sketching ideas for a latch that would keep a door closed (use the classroom door as a model).
5. Once students have sketched an idea, have them use the magnets and makerspace materials to build their own. They can use the door to the classroom to test it out. Tell students that it is okay if their design does not work the first time. That is part of the scientific process!

Continued on page 2



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Continued from page 1

6. Once students have tested their latch, they can adjust as needed. They will then write a short 3-5-sentence summary on their latch, including an explanation of whether it worked or didn't work.

## Evaluation

• Student was engaged in the lesson throughout	3	2	1
• Student sketched an idea for a latch	3	2	1
• Student wrote 3-5 sentences explaining their invention	3	2	1