

# imagination hub: tinkering with everyday objects chain reactions

We have put some items into sensory boxes that you will need and then it is up to you to find the rest around your home.

Please do make sure to share your ideas and experiments from the boxes with us! Send them to [imaginationhub@ioi.london](mailto:imaginationhub@ioi.london). We would love to see what you come up with!



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# experimenting with chain reactions



## What is a Chain Reaction?

A Chain Reaction is a sequence of little events where one object hits another object to create a reaction.

You can think of it like your morning routine. Normally, we have a series of things that we do in a particular order before we go to work or school.

We get out of bed, then go to brush our teeth, take off our PJs, have a shower, put our school clothes on, and then we eat breakfast, and so on. It is always in a particular order: one action leads to the next action. With our Chain Reaction though, if one thing doesn't happen, the next won't happen either!



## What will I need?

For a Chain Reaction you can use different objects you find around the house. We found that these items work really well:

- LEGO
- Dominos
- Books
- Bricks
- Cardboard
- Lollypop sticks
- Balls
- String
- Coat hangers
- Marbles
- Masking tape (to help!)

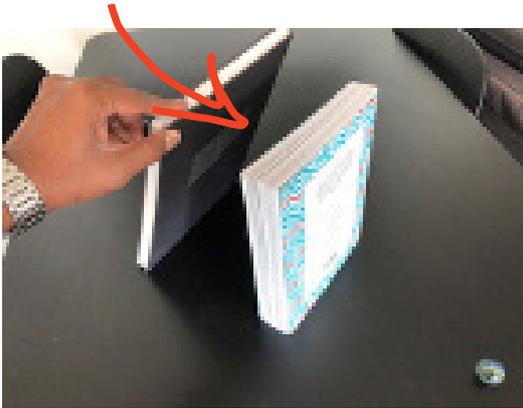




## How to get started?

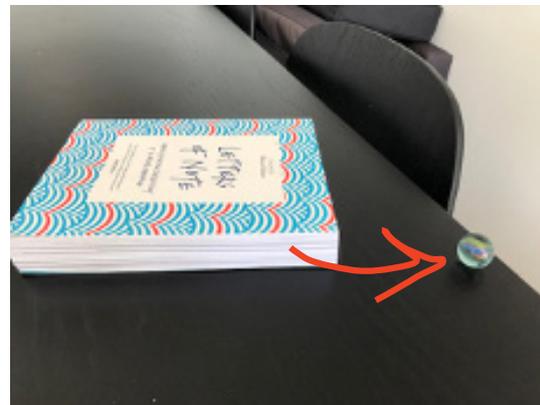
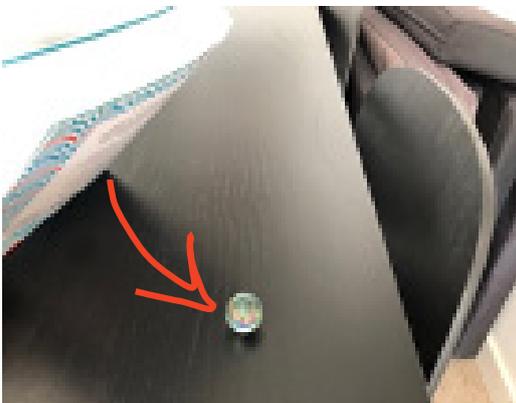
Today we are going to put lots of objects in a sequence of little events. When we do something to one of them, it is going to do something to the next.

We could say that the force we show one thing is going to pass onto the next thing. Let's use two books and a marble to explain. As we push the book over, we have to use enough force to stop it standing up and to push the next book over too.

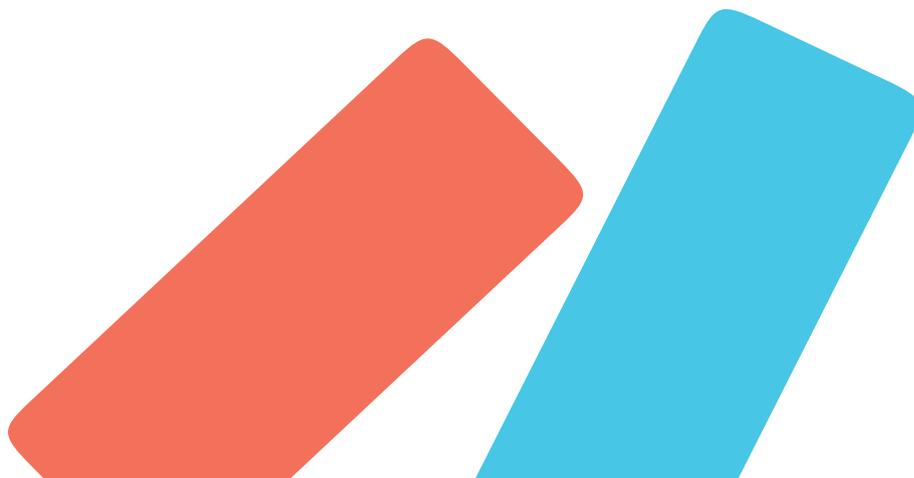
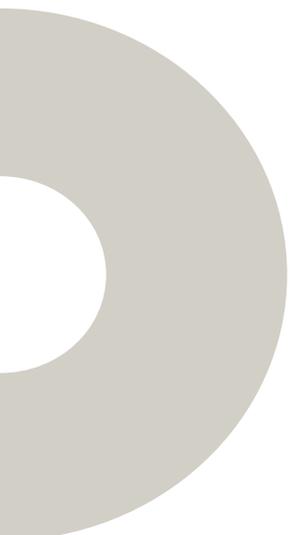


As the second book hits the marble, it has to use enough force to push the ball forward and not let it stand still, and so on.

Energy is passed on from one object to the next!



Try using objects and materials you can find around your house to make your own Chain Reaction!

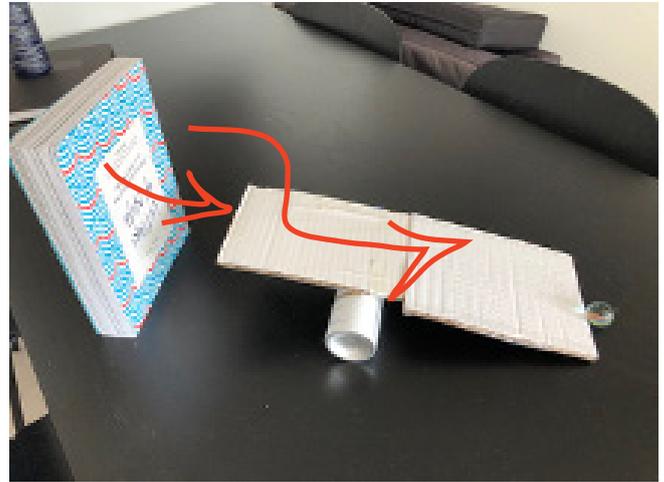


## Chain Reaction Top Tips



### The Marble Seesaw Push

For this you need a cork (or some kind of cylinder, like a deodorant can), a ruler or long flat hard object, a book and a marble. Simply balance your ruler on the cork and get your marble ready at the end of the ruler. Push a book over onto one end of the ruler so that the marble is pushed forward by the other end.



### Creating a Zip Line

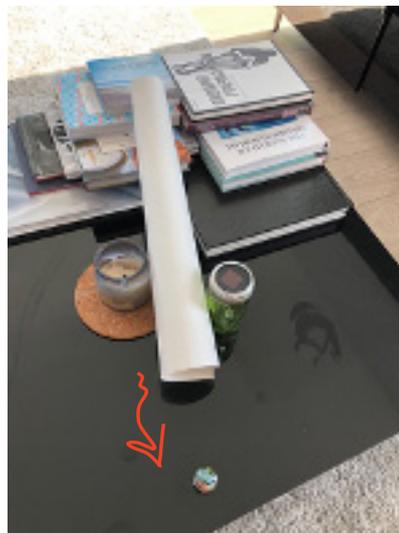
For this you need to tie a strong string tightly from a high point to a low point, where you have placed the next part of the chain reaction.

Simply hang something with weight off a hanger and drop it from the top of the zip line. Watch it glide down to continue the chain reaction!



### Creating a Ball Slide

Take some cardboard or a paper roll and make a slide for your marble or ball to fall down from a high to a low spot. Use masking tape to make it as long or as short as you like!



## Keep experimenting and testing!



See how big a chain reaction you can make. Try and use as many different types of objects as you can. Keep asking yourself questions like:

- Do heavy or light objects work best?
- Which objects stand up the easiest?
- Which things move around too much?
- Is there enough force to continue the Chain Reaction?

### Don't Give Up!

It often doesn't work first time. Keep testing your Chain Reaction events until it goes right for you.

And don't be afraid to use your little finger (the magic pinkie) to keep the chain reaction going if it needs a bit of help!

We hope you enjoyed playing with chain reactions! Do make sure to share your videos of your own chain reaction with us at [imaginationhub@ioi.london](mailto:imaginationhub@ioi.london). We would love to see what you come up with!

