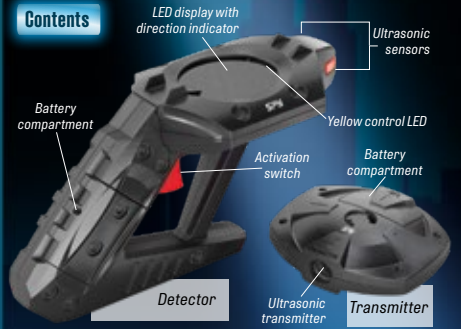
## Dear Parents and Supervising Adults,

Before starting the experiments, please read the manual together with your child and discuss the safety instructions.
Make sure to keep the packaging and instructions as they contain important information.

WARNING! Not suitable for children under 3 years. Choking hazard — small parts may be swallowed or inhaled.

### Contents

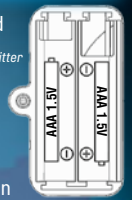




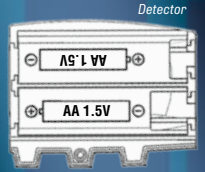

## Experiments

### Setting Up the Detector and Transmitter

WARNING: An adult should insert and change the batteries.




Use a Phillips-head screwdriver to loosen the screw on the transmitter's battery cover. Lift the cover to open the battery compartment. (The screw will remain in the cover.)
Remove any old batteries (if applicable) and insert two new AAA (1.5-volt, type LR03) batteries. Pay close attention to the correct polarities, using the images shown on the right. Close the battery compartment and screw the cover back on.




Follow the same steps for the detector, using two new AA (1.5-volt, type LR6) batteries.



### How Your Spy Location Tracker Works

Turn on your transmitter by sliding the switch on the bottom of the device to the "I" position. The red LED will light up as soon as the transmitter is activated, sending inaudible ultrasonic waves into space.

Hide the transmitter in a place where the signal **won't be obstructed,** like next to or on top of a box containing your treasures, or on a bookshelf where you store secret documents or have evidence hidden. You can even use it to mark meeting points or a person's whereabouts. Try hiding your transmitter under a thin blanket or behind a cabinet door to see if the ultrasonic waves are able to pass through to the transmitter.

Did you know that bats use **ultrasound** to locate obstacles and food in their environment? To do this, bats emit sound waves at frequencies that humans cannot hear (called ultrasound) through their mouths or noses at a rate of about 160 to 190 "chirps" per second. The sound waves bounce off objects in the environment, and when they return to the bat's ears, the bats are able to create a perceptual, mental map that allows them to navigate in the dark.



Once you have chosen a spot for your transmitter and placed it there (or someone else has hidden it), you or another fellow detective can use the handheld detector to locate it.

To do this, go from room to room pressing the red trigger on the detector to evaluate the ultrasonic sound waves, following the display on the LED scale.

The yellow LED in the middle indicates that your device is active. When you are within a 15-meter (50-foot) range of the transmitter, the LEDs to the right and left light up. The closer you are to the transmitter, the brighter the lights will become. The LEDs also tell you in which direction to walk to get closer to the transmitter. If the LEDs on the right are glowing brighter than the LEDs on the left, your detector is telling you to move to the right.

A bat's ears work the same way. If the sound waves reach the right ear faster than the left ear, the bat knows that the item the sound waves are bouncing off of is toward its right and turns accordingly.

Find a partner or a group and try playing hide and seek (or organizing a treasure hunt) using your detector and transmitter. One person or group hides with the transmitter (or hides an item and walks away), while the other uses the detector to find the location of the hiding place. Great hiding spots for your transmitter include under a thin blanket, behind a door (with a small gap), on a bookshelf, or out in the garden behind a bush.

You can also try searching for your transmitter in the dark! Pick a room that is free from obstacles (so you don't bump into anything), but not too empty (so the sound waves don't bounce all over and become scattered). Outside will work too, as long as there's nothing for you to trip over. See if you are as skilled as a bat! And speaking of animals, make sure not to use your transmitter near pets, as many animals can hear ultrasound.

The word "ultrasonic" is made up of the Latin word *ultra* (meaning beyond) and *sonic* (from the Latin "sonus," meaning sound). Ultrasonic refers to sound (vibrations that ripple away from its source in waves) with a frequency beyond the limit of human hearing. The rate of the vibration is called its frequency. Humans can hear sounds at frequencies between 20 and 20,000 waves per second, meaning ultrasonic waves are at a frequency of 20,001 and up.





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Model: 548003
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

We reserve the right to make technical changes.

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**Safety for Experiments with Batteries:**

- An adult should insert and change the batteries.
- To operate the devices, you will need 2 AA batteries (1.5-volt, type LR6) and 2 AAA batteries (1.5-volt, type LR03), which could not be included in the kit due to their limited shelf life.
- Avoid a short circuit of the batteries. A short circuit can cause the wires to overheat and the batteries to explode.
- Different types of batteries or new and used batteries are not to be mixed.
- Do not mix old and new batteries.
- Do not mix alkaline, standard (carbon-zinc), or rechargeable (nickel-cadmium) batteries.
- Batteries are to be inserted with the correct polarity (+ and –). Press them gently into the battery compartment. See page 3.
- Non-rechargeable batteries are not to be recharged. They could explode!
- Rechargeable batteries are only to be charged under adult supervision.
- Rechargeable batteries are to be removed from the toy before being charged.
- Exhausted batteries are to be removed from the toy.
- The supply terminals are not to be short-circuited.
- Dispose of used batteries in accordance with environmental provisions, not in the household trash.
- Avoid deforming the batteries.
- Do not leave the detector or transmitter in direct sunlight or expose them to other sources of heat.
- IMPORTANT! Protect the device from moisture. Clean it with a damp cloth and allow it to dry thoroughly before using it again.

**NOTES ON DISPOSAL OF ELECTRICAL AND ELECTRONIC COMPONENTS**

The electronic components of this product are recyclable. For the sake of the environment, do not throw them into the household trash at the end of their lifespan. They must be delivered to a collection location for electronic waste, as indicated by the following symbol:

Please contact your local authorities for the appropriate disposal location.

SPY LABS INCORPORATED

# Spy Location Tracker

The transmitter emits ultrasonic sound waves, which you can detect and track using the handheld detector. Hide the transmitter with a valuable object, an important case document, or a suspect, and then use the detector to search for its whereabouts. The LED display leads you to it!

THAMES & KOSMOS