

# The Physics Quest Challenge

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## **A Floating University**

Marie Skłodowska Curie and her family lived double-lives. They were Polish and lived in Warsaw during the late 1800s. Warsaw had been the capital of Poland. However, as a result of various wars, Poland was split apart and Warsaw was controlled by Russia when Marie was born.

The leader of Russia made it illegal for people to speak Polish and teach Polish history. People could lose their jobs, go to jail, or even be killed for being loyal to Poland.

Marie's family believed that Poland should be its own country again. They resisted the Russian authorities in secret.

During elementary school Marie's class followed a coded schedule. For example, a class on Polish geography might be called "Russian Language" on the schedule. When Russian inspectors came to check on the school the students would hide their Polish books and pretend they were learning Russian instead.

Marie was a very good student. She wanted to study math and science in a university, but the university in Warsaw didn't let females study there. Marie didn't have enough money to go to another university. Luckily, Marie had another option.

There was a secret university in Warsaw run by Polish professors. The professors taught groups of students in their homes. The classes had to be kept secret because the police could arrest the teachers for teaching Polish history and culture. This school was called the Floating University because the classes "floated" around to different houses. This kept the police from finding out about the classes.

## **Your Mission**

Find the secret location of Marie's next class. Be careful — you don't want to end up at the Police Station or the Courthouse with your Polish books!

The location of the Floating University has to be kept very secret. If the police find out everyone will be in trouble! To find the secret location you will need to solve four challenges. Each one will get you a step closer to finding the secret location.

Good luck!

# Final Report

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Using your results from each activity, your group is now ready to help Marie find her next class. Place the grid sheet on top of the map of Warsaw, being careful to match the compass points. Tape the two sheets of paper together at the top.

## Starting Point

**A:** Marie's Apartment

## First Move

*Activity 1: Based on the ranking from lowest heat conductivity to highest heat conductivity, if your group ranked cardboard...*

**1st** ..... then move 1 box WEST

**2nd** ..... then move 2 boxes EAST

**3rd** ..... then move 1 box EAST

**4th** ..... then move 1 box SOUTH

## Second Move

*Activity 2: For the main difference between hot and cold water, if your group chose...*

**Cold water molecules are bigger** ..... then move 1 box EAST

**Hot water molecules are bigger** ..... then move 2 boxes SOUTH

**Cold water molecules move faster** ..... then move 3 boxes SOUTH

**Hot water molecules move faster** ..... then move 4 boxes SOUTH

## Third Move

*Activity 3: Based on which graph looks most like the one you created, if your group chose...*

**Graph 1** ..... then move 1 box EAST

**Graph 2** ..... then move 2 boxes WEST

**Graph 3** ..... then move 1 box SOUTH

**Graph 4** ..... then move 2 boxes NORTH

## Fourth Move

*Activity 4: If your group classified the reaction as...*

**Endothermic** ..... then move 2 boxes NORTH

**Exothermic** ..... then move 2 boxes WEST

**Where is Marie's class?** \_\_\_\_\_

*(If there is no landmark near your final move, try re-checking your results)*