



Mission Briefing

OH NO!!! Your parents want to test your survival skills, so they've dropped your team off in the middle of the woods. It's up to you to dodge the woodland creatures, crack four locks, and navigate your way out of the treacherous forest!

How to escape

- 1 Your packet has **4 station clue cards**. Solve each card to build a code.
- 2 Enter each code in the forest on your team's device. Locks open **in order**: Station 1 first.
- 3 Use a **periodic table**. The Field Guide button on screen has one too.
- 4 A **wrong code adds 1:00** to your team's time. A **hint adds 3:00**. Check your work before you submit!
- 5 Record your answers and reasoning on your team's **Survival Log**.
- 6 The team with the **lowest effective time** (time + penalties) wins.

Team name: _____

Station order:  1 Flashlight  2 Firestarter  3 Cabin  4 Navigation

Flashlight in the Dark Woods



Your parents drop you off near dusk. You hear a rattling in the woods... Use your trusty flashlight to find out what it was.

CLUES

1 Which element has the largest atomic size?



ANSWER

2 Which element has the largest electronegativity?



ANSWER

3 Which element has the most shielding?



ANSWER



BUILD YOUR CODE

Write the **element symbol** of each answer, in order. Together the symbols spell a **4-letter word**.

The Firestarter Chest



Now that you're scared for your life, you need to start a fire. Unfortunately, your parents locked up your supplies. Use the clues to unlock your firestarter!

CLUES

1 Which element is the most reactive?



ANSWER

2 Which element has the lowest nuclear charge?



ANSWER



BUILD YOUR CODE

Find the **atomic number** of each answer. Put the atomic numbers side by side, in order, to make the **4-digit code**.

The Cabin Door



Congratulations, you survived the night! But now you're starving. Your parents, being the devious people they are, hid food in a nearby cabin. Use the clues to unlock the cabin door.

CLUES

1 Which element has the highest electronegativity?



ANSWER

2 Which element is the largest?



ANSWER



BUILD YOUR CODE

Find the **atomic number** of each answer. Put the atomic numbers side by side, in order, to make the **3-digit code**.

Forest Navigation Path



You're rested and fed, so it's time to find your way out of the forest! Each clue points in a direction on the periodic table. Follow all five to escape.

CLUES

- 1 Which way does nuclear charge increase for these elements?



DIRECTION _____

- 2 Which way does the shielding effect increase for these elements?



DIRECTION _____

- 3 Which way are these elements increasing in size?



DIRECTION _____

- 4 Which way are these elements increasing in ionization energy?



DIRECTION _____

- 5 Which way are these elements decreasing in electronegativity?



DIRECTION _____



BUILD YOUR CODE

Each answer is a **direction on the periodic table**: UP, DOWN, LEFT, or RIGHT. Picture the elements on the table and enter all five directions **in order**.

STEP 1

STEP 2

STEP 3

STEP 4

STEP 5