

Colt Wilder's Sinking Ship

Game Creator: Nathan Karstulovich

Ages: 11+

Ideal Group Size: Groups of 5 (up to 30 players)

Content Area: Math - Geometry

Story

Colt Wilder is the protagonist in the Colt Wilder Adventures series of books. Colt Wilder is everything his name suggests. He is strong, a leader and a peacemaker. He is always looking for a good time. Colt is a scuba diver, a sailor, a lifeguard, and a surf instructor. To top it off Colt is part of a secret group of highly trained paramilitary teenagers, called CAPE.

Unfortunately, Colt's vacation has gone bad. Colt and his friend Summer have been sailing aboard a massive 102,000-ton ship - the CFS Victor. It ran aground on the barrier reef off the coast of Belize. The 897-foot ship is listing to the starboard side and sea water is rushing through the jagged hole in the hull. With 2749 passengers onboard and 1100 crew members, there are many people that need to get into lifeboats, quickly. Upon hearing the alarms sound Colt and Summer moved toward their muster station but overhearing that the engine room is taking on water with 100 of the crew inside, they make a choice to help. Colt and Summer think they can use their para-military training to help free the trapped crew members.

It's your turn to become part of the CAPE team and help Colt and Summer free the crew from the sinking ship.

*The story for this game is also explained in the video that can be found at www.coltwildersinkingship.weebly.com and should be the starting point for all students in the game.

Special Rules/Expectations

Students should work in teams of five (up to 6 teams of 5).

Each team will be given a color and may only take/read cards of their given color.

Teams will compete against each other to add an element of competition.

To set-up the game...

Start by going to www.coltwildersinkingship.weebly.com

Review the video on the home page and then follow the first clue in the video.

The [Contact](#) link gives a message to students that they may have one hint from the teacher, if students take the time to click on the links. The other links include a photo and a video that will be used in later clues.

You will need six colored cards for clues 2 through 6. Write each clue on each colored card.

Each team of five students will work together to solve the clues. Each time they solve a clue, they will receive the next clue on their colored card (like in Amazing Race).

Before starting the game, you will need to hide an invisible ink message in the schoolyard playground area for clue 2 (under a slide, for example) available at www.coltwilderbreakouts.weebly.com

You will also need a UV flashlight, grid paper, and protractors.

To begin the game...

Give students this website address www.coltwilderbreakouts.weebly.com. There they will find the opening video and clue one. Say good luck and let them go.

Clue 1

The engine room is a part of the ship that needs to be protected. In order to free the crew from a terrible fate inside, you will need to help Colt and Summer unjam all of the locks to open the two steel hatches. The locks on each hatch are coded so that only authorized crew members may enter.

Help Colt and Summer determine the code for the first lock.

First, find or create an equilateral triangle. Second, determine how many lines of symmetry are possible within the triangle.

Now, draw a quadrilateral with only three different angles.

Next, draw a hexagon and determine the total sum of the internal angles. Divide that number by 240.

Unlock the 3-digit lock to open the first hatch. To do so, determine the three digits that are common to the three clues above.

Open the hatch and find your next clue.

Answer:

Lines of symmetry in an equilateral triangle: 3

The common digit for a quadrilateral with three different angles is: 3

The sum of the internal angles of a hexagon is 720, divided by 240 is: 3

Clue 2

A message from the cruise director on the lido deck will help you find the next code. Head to the lido deck now and find the message then use it to find out what to do next.

(students should find the invisible ink message in the park/splash pad on the school yard)

Invisible Message: Knowing angles and geometry helps sailors navigate the waters of the ocean, using angles between stars and land forms to find directions. The Cruise Director was a former baseball player. Find the dimensions and draw homeplate. Measure and label the angles of each corner. Use all of the different digits you find greater than zero to open the next lock.

Tell the captain the digits you have found and he/she will give you clue three.

Answer:

The front two corners of homeplate are each 90 degrees. The back point is also 90 degrees. The other two angles are each 135 degrees. The digits greater than zero are 9 1 3 5, which is the code for the four-digit lock.

Clue 3

The ship is sinking. There is no time to play in the pool. Go to the ship's Ballroom and ask the dance instructors to teach you to Ballroom Dance. Show your new skills to the captain, who will then give you the next part of the clue.

Clue 3, Part 2 -

You have just learned to Ballroom Dance. Tell the captain how your dance used geometry and he/she will tell you how to unlock the alpha-code.

Use the name of the dance you learned to unlock the alphabet code.

Tell the captain the dance name that will open the lock and she/he will give you the fourth clue.

Answer:

WALTZ

Clue 4

To get air into the engine room Summer is going to crawl into the duct work and slip an airhose into the room. The duct work is narrow. Once inside, Summer will be able to slide forward, back, left, or right but will always be on her stomach without the ability to turn her body. Simulate her duct shimmy by going to the North-West corner of the school yard. Then work your way around the building using four movements, always facing south.

The four directions you use will help you unlock the directional lock and get you one step closer to freeing the engine crew.

Answer:

forward (up)

left

backward (down)

right

Clue 5

To open the final hatch there is a large metal bar that acts as a door handle. When closed and locked the handle is at an angle of zero degrees. In order to open the hatch fully, you must lift the handle 90 degrees, pull back, then move the handle another 75 degrees. Show the angle, from its starting point to the final position, to the captain. Then use the digits in the final angle to open the 3-digit lock.

Answer: 1-6-5

Clue 6

The key to success in this mission lies with the captain. In order to find the captain, you will need to go through a series of transformations. It's your job to show Colt and Summer how to get the key.

Start by placing coordinates on a 4-quadrant grid. The coordinates should be placed at $A(4,4)$ - $B(4,7)$ - $C(8,7)$ - $D(8,4)$. Connect the coordinates to create a quadrilateral. Next, translate the shape nine spaces left. Now, rotate the shape 90 degrees, counter-clockwise about point A. Finally, reflect the shape across the line $Y=2$.

Once you have clearly labelled the shape in its new position, show the captain, who will help you to open the final lock.

Answer:

A correct answer will have the following coordinates, $A(-5,0)$ - $B(-8,0)$ - $C(-5,-4)$ - $D(-8,-4)$