

Score a touchdown

(PRIMARY FOCUS: COMPUTING)

For students from approximately 4 to 10 years old.

SUMMARY

Learning through play is always a really effective way for students to make great progress. So, why not include a game of American football, during the Super Bowl month in your KUBO coding lessons? This activity is a great way to get students visualizing a function to score a touchdown! Your students will be building routes, writing functions and debugging.

Task 1: Design your team logo

Students design the logo of their favorite team / the team they will be playing and glue it to the end of the map (see placeholder on page 8). Students cut out KUBO's outfit and dress up KUBO as an American football player (page 9).

Task 2: KUBO scores a touchdown

Student 1 has the attacker (the KUBO Robot) and Student 2 has two defenders (two counters).

Student 1 programs KUBO to run with the ball and score a touchdown.

Student 2 uses the two counters to block KUBO from scoring a touchdown.

The two students take turns to attack and defend.

Level - Easy: map 1

Student 1 places the "Play" TagTile[®] onto the field (the KUBO map). Student 2 then places their two defenders (counters) onto the field.





Student 1 has to write a function that KUBO has to execute / run on the field to score a touchdown, without touching Student 2's players.

If successful, Student 1 scores a point. The students should then swap roles so Student 2 can score some points!

If the function is not successful then it's a great debugging opportunity for the two students. Can they work together to fix the function and explain what they did?

To make this activity more accessible to younger students and new KUBO users, the TagTile[®] pieces could be laid out on the mat (See Example solution).

Level - Advanced: map 2

Student 1 places the "Play" TagTile[®] onto the field (the KUBO map) and writes a function that KUBO has to execute / run on the field to score a touchdown, without Student 2 seeing the function.

Then Student 2 is shown the function for 1 minute. Student 2 has to figure out what route Student 1 has planned and how to block the attack by placing the two defenders (counters) in the Red zone. NOTE: Student 2 can only place their defendants in the Red zone!

Student 2 then places their defenders and Student 1 runs the function. If KUBO scores a touchdown, Student 1 wins a point. If not, Student 2 wins a point.

The students should then swap roles.

Have fun playing American football with KUBO!

BEFOREHAND

Students should understand how to use the KUBO Robot and the KUBO Coding TagTiles.

RESOURCES

- 1 KUBO Robot per pair, fully charged
- 1 KUBO Coding Starter Set
- KUBO American football map (page 6 & 7 (A3/tabloid))
- KUBO American football outfit (page 9)
- Drawing tools and materials
- Two counters in one color
- Optional extras
 - › KUBO Coding+ Set

CROSS-CURRICULAR LINKS

- Computer Science: Create an algorithm that accomplishes specific goals; debug and solve problems by decomposing them into smaller parts.
- Math: Use mathematical vocabulary to describe position, direction and movement, including whole, half, quarter and three quarter turns.
- Art and Design: Use a range of materials to design and draw logos.



EXTENSION ACTIVITIES

Students can refine their function by including a loop.

Using KUBO Coding+, the students can add a Go High Speed TagTile[®] to the function to make KUBO run for the touchdown.

Using KUBO Coding+, the students can try to make the shortest function to score a touchdown by for example using the Go Forward 2x, 3x or 4x TagTiles or by adding a loop.

Using KUBO Coding+, the students can add a wait and turn TagTiles[®] pieces when KUBO reaches a defender, and make KUBO change direction, as a real player would.

SOLUTION EXAMPLE

experienced KUBO users can lay the

Easy level: Younger or less

TagTiles on the map.





Advanced level: Suggested solution

with TagTiles on the map.

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Advanced level: Solution using a function.

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Advanced level: Solution using a loop.







Solution using KUBO Coding+ the Go Forward 2x, 3x or 4x TagTile® pieces.



Solution using KUBO Coding+ and the wait and turn TagTile[®] pieces.

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