Einstein's Riddle

Explore areas of teamwork and problem solving with this riddle

Description: This multi-faceted riddle will challenge participants to use their brains and their teammates to solve a problem. Developed by Albert Einstein, very few people can solve it without help from others.

Purpose: The purpose of this activity is to teach participants to work together and to look outside of the box.

Time: About 20 min, depending on how many hints are given

Age: Older youth, no younger than middle schoolers

Suggestions: Once everyone seems "stumped," offer a clue. Repeat until one team has solved the riddle. Afterwards, explain how to solve it.

Materials: The facilitator will need the Facilitator Packet. Participants will need the Participant sheet- one per group *You will have to copy off enough sheets for the groups*

What To Do:

1. Divide the participants into even groups. Try to mix the ages of participants to make it more fair.
2. Read the "Background Information" in the Facilitator Packet to the group
3. Give each group one copy of the Participant Sheet (only one is included)
4. Once it seems that everyone is stuck, offer a clue.
5. When groups think they have it figured out, compare their chart to the answer key
6. Once enough groups have finished or time is out, read the answer and the Wrap Up.
7. Discuss Reflection Questions

Reflection Questions:

How does this activity relate to the theme "4-H Grows"?
What did you learn about communication from this activity?
What did you learn about problem solving?
What can you take away from this experience?

Sources: Van Der Vieren, Dan. "Can You Solve Einstein's Riddle?" *Ted-Ed*. Youtube.com, 30 Nov. 2015. Web. 18 Sept. 2016.

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Participant Sheet- One per group

Background Information:

The possible wall colors are: red, yellow, green, blue, and white
The possible nationalities are: Norwegian, Danish, British, German, and Swedish
The possible cereal flavors are: Cheerios, Cinnamon Toast Crunch, Raisin Bran, Captain Crunch, and Fruit Loops
The possible beverages are: Milk, Tea, Root Beer, Coffee, and Water
The possible pets are: horse, cat, dog, bird, and the stolen fish

The Clues:

1. The British man lives in the house with red walls
2. The Swedish man has a dog
3. The Danish man drinks tea
4. The house with green walls lives to the left of the house with white walls
5. The owner of the house with green walls drinks coffee
6. The person who eats Cheerios owns a bird
7. The owner of the house with yellow walls eats Fruit Loops
8. The man living in the center house drinks milk
9. The Norwegian man lives in the first house
10. The man who eats Captain Crunch lives next to the cat owner
11. The horse's owner lives next to the man who eats Fruit Loops
12. The man who eats Raisin Bran drinks root beer
13. The German man eats Cinnamon Toast Crunch
14. The Norwegian man lives next to the house with blue walls
15. The man who eats Captain Crunch has a next door neighbor who drinks water

	House 1	House 2	House 3	House 4	House 5
Nationality					
Cereal					
Beverage					
Wall Color					
Animal					

Facilitator Packet

Background Information

The world's rarest fish has been stolen from the city aquarium. The police have followed the scent to a street with **5 identical looking houses**. They can't search all of the houses at once, and if they pick the wrong one, the thief will know that they're on his trail. It's up to you, the city's best detectives, to solve the case. When you arrive, the police tell you what they know. **Each house's owner is of a different nationality, drinks a different beverage, and eats a different breakfast cereal. Each house's interior walls are painted a different color. Each house contains a different animal, one of which is the fish.** You gather these clues (the clues on the sheet given to the participants), and begin to solve the case.

-Allow time for participants to figure it out-

Answer Explanation (Use for hints if necessary):

1. To start, fill in the information from clues 8 and 9.
2. Since the Norwegian lives on the end of the street, there's only one house next to him, which must be the one with blue walls in clue 14
3. Clue 5 says that the green walled house's owner drinks coffee
    a. It can't be the center house, because its owner drinks milk (Clue 8)
    b. It also can't be House 2 since we just said that it has blue walls
    c. Since clue 4 says that the green walled house must be directly to the left of the white walled one, it can't be House 1 or 5 either.
        i. House 1 is to the left of a blue walled house and House 5 isn't to the left of any house
    d. So, the place for the green-walled house with the coffee drinker is House 4, and the white walled house is House 5
4. Clue 1 gives you a nationality and a color. Since the only house missing both of these criteria is House 3, House 3 becomes the British man's house with red walls
5. Now that the only unassigned wall color is yellow, and the only house without a color is the first one, you can say that the first house has yellow walls, where clue 7 says that the Fruit Loop eater is.
6. Clue 11 says that the horse owner lives next to the Fruit Loop eater, so the horse must belong to House 2.
    a. Since House 1 is on the end of the street, there is only one option for this
7. The next step is to figure out what the Norwegian drinks.
    a. Since the Danish man drinks tea, the person that drinks root beer eats Raisin Bran (Clue 12), and milk and coffee are already assigned, the Norwegian must drink water.
8. From Clue 15, you know that the water-drinker's neighbor eats Captain crunch, so it must be the second house.
9. Now that the only home without a cereal and a drink is the fifth house, it must the the Raisin Bran and Root Beer consumer from Clue 12

10. Since this leaves House 2 as the only one without a drink, it must be the home of the tea-drinking Danish man from Clue 3.
11. This now leaves House 4 as the only one without a cereal or a nationality, so it must be the home of the Cinnamon Toast Crunch eating German man from Clue 13
12. From process of elimination, you can conclude that the British man eats Cheerios, and the owner of the fifth house is the Swedish man.
13. From there, we can say that the Cheerio-eating British man owns a bird (Clue 6), and the Swedish man in the fifth house owns a dog. (Clue 2)
14. Clue 10 says that the person that eats Captain Crunch lives next to the cat owner. Since you established that the Danish man in House 2 eats Captain Crunch, and the British man in House 3 has a bird, the cat owner must live in House 1.
15. This leaves the fourth house as the only one without a pet, making it the home of the missing fish.

Wrap Up: You and the police burst into the fourth home and catch the fish-thief. There are many ways that you could have solved this puzzle, and the more puzzles you do, the faster and easier it will be to do it. The logic used here is not too different from the thinking used in everyday life, such as math problems, decision making, and so much more.

Answer Key:

	House 1	House 2	House 3	House 4	House 5
Nationality	**Norwegian**	**Danish**	**British**	**German**	**Swedish**
Cereal	**Fruit Loops**	**Captain Crunch**	**Cheerios**	**Cinnamon Toast Crunch**	**Raisin Bran**
Beverage	**Water**	**Tea**	**Milk**	**Coffee**	**Root Beer**
Wall Color	**Yellow**	**Blue**	**Red**	**Green**	**White**
Animal	**Cat**	**Horse**	**Bird**	**Fish**	**Dog**