

Identifying Variables

Name:

Period:

Date:

Directions: Read through each scenario and identify the independent variable, dependent variable, and the control. Beware- not all experiments will have a control!

1. Sara wants to see if a new brand of hair dye lasts longer than the brand she currently uses. She puts the new hair dye on the left side of her head and the old brand on her right side. After 2 weeks she observes which side of her head has more gray hair showing through.
 - a. Independent Variable = _____
 - b. Dependent Variable = _____
 - c. Control = _____
2. Rob is in charge of waxing the floor at the local mall. He wants to test a new brand of floor wax called Squeaky Clean. Rob waxes 20 floor tiles with Squeaky Clean and 20 tiles with the original wax brand. After one week he counts the number of scratches on the floor.
 - a. Independent Variable = _____
 - b. Dependent Variable = _____
 - c. Control = _____
3. Chris wants to see if his basil plants grow better in full sunlight or partial sunlight. He plants 5 basil plants on the east side of his house that only receives light in the morning, and 5 more plants on the south side of his house that receives light all day. After a month Chris measures the height of each plant.
 - a. Independent Variable = _____
 - b. Dependent Variable = _____
 - c. Control = _____
4. Shannon wants to see if the amount of time she studies will affect her grades. She normally studies for 30 minutes a night, but decides to double her study time to one hour per night. Over the next three weeks Shannon sees her science grade raise 10%.
 - a. Independent Variable = _____
 - b. Dependent Variable = _____
 - c. Control = _____
5. Eric wants to see if a Shark vacuum works better than his current Oreck. He makes sure both of the vacuum canisters are empty, and then vacuums half of the living room with the Oreck and the other half with the Shark. After vacuuming he measures the amount of dust in each canister.
 - a. Independent Variable = _____
 - b. Dependent Variable = _____
 - c. Control = _____

6. Rebecca wants to see if her kitten prefers new chicken flavored treats over her usual beef flavored treats. She puts 10 chicken treats in one bowl and 10 beef flavored treats in another bowl. She sees which treats her kitten eats first and repeats this experiment for 3 days.
- Independent Variable = _____
 - Dependent Variable = _____
 - Control = _____
7. Mark notices he has dropped calls on his cell phone when he walks into his bedroom. His friend told him to try and wrap aluminum foil around his phone to get better signal. Mark talks on the phone 3 times while walking into his bedroom and drops 2 of the 3 calls. He wraps his phone in aluminum foil and talks on the phone 3 more times while walking into his bedroom. With the aluminum foil on his phone he only drops 1 phone call.
- Independent Variable = _____
 - Dependent Variable = _____
 - Control = _____
8. Heidi is a chocolate lover and eats chocolate daily. She has a bad break-out and her friend told her eating chocolate causes pimples. Heidi continues to eat chocolate every day for 2 weeks and counts the number of pimples she has on her face. The following 2 weeks she doesn't eat any chocolate and counts the number of pimples on her face.
- Independent Variable = _____
 - Dependent Variable = _____
 - Control = _____
9. Ruthie has a pet goldfish. After several months the goldfish quits growing. Ruthie's Mom told her the goldfish might have stopped growing because the tank is too small. Ruthie measures the size of her goldfish in its current tank, and then puts the goldfish in a larger tank. After 2 months the goldfish is now 1 cm longer.
- Independent Variable = _____
 - Dependent Variable = _____
 - Control = _____
10. Nicholas has been biting his nails since he was a kid. He wants to break the habit so he puts bitter tasting nail polish on his left hand and leaves his right hand without polish. After 3 days he notices his nails on his left hand have grown but he continued to bite his right hand nails.
- Independent Variable = _____
 - Dependent Variable = _____
 - Control = _____

Identifying Variables ANSWER KEY

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Directions: Read through each scenario and identify the independent variable, dependent variable, and the control. Beware- not all experiments will have a control!

1. Sara wants to see if a new brand of hair dye lasts longer than the brand she currently uses. She puts the new hair dye on the left side of her head and the old brand on her right side. After 2 weeks she observes which side of her head has more gray hair showing through.
 - a. Independent Variable = **Brand of hair dye**
 - b. Dependent Variable = **Number of gray hairs**
 - c. Control = **Half of her head with the old brand**
2. Rob is in charge of waxing the floor at the local mall. He wants to test a new brand of floor wax called Squeaky Clean. Rob waxes 20 floor tiles with Squeaky Clean and 20 tiles with the original wax brand. After one week he counts the number of scratches on the floor.
 - a. Independent Variable = **Brand of floor wax**
 - b. Dependent Variable = **Number of floor scratches**
 - c. Control = **20 tiles with the original wax brand**
3. Chris wants to see if his basil plants grow better in full sunlight or partial sunlight. He plants 5 basil plants on the east side of his house that only receives light in the morning, and 5 more plants on the south side of his house that receives light all day. After a month Chris measures the height of each plant.
 - a. Independent Variable = **Location of basil plants**
 - b. Dependent Variable = **Height of plant**
 - c. Control = **No control**
4. Shannon wants to see if the amount of time she studies will affect her grades. She normally studies for 30 minutes a night, but decides to double her study time to one hour per night. Over the next three weeks Shannon sees her science grade raise 10%.
 - a. Independent Variable = **Amount of study time**
 - b. Dependent Variable = **Science grade**
 - c. Control = **Studying 30 minutes per night**
5. Eric wants to see if a Shark vacuum works better than his current Oreck. He makes sure both of the vacuum canisters are empty, and then vacuums half of the living room with the Oreck and the other half with the Shark. After vacuuming he measures the amount of dust in each canister.
 - a. Independent Variable = **Type of vacuum**
 - b. Dependent Variable = **Amount of dust**
 - c. Control = **Oreck vacuum**

6. Rebecca wants to see if her kitten prefers new chicken flavored treats over her usual beef flavored treats. She puts 10 chicken treats in one bowl and 10 beef flavored treats in another bowl. She sees which treats her kitten eats first and repeats this experiment for 3 days.
 - a. Independent Variable = **Flavor of treats**
 - b. Dependent Variable = **Which treats the kitten eats first**
 - c. Control = **Beef flavored treats**

7. Mark notices he has dropped calls on his cell phone when he walks into his bedroom. His friend told him to try and wrap aluminum foil around his phone to get better signal. Mark talks on the phone 3 times while walking into his bedroom and drops 2 of the 3 calls. He wraps his phone in aluminum foil and talks on the phone 3 more times while walking into his bedroom. With the aluminum foil on his phone he only drops 1 phone call.
 - a. Independent Variable = **Wrapping the phone in foil**
 - b. Dependent Variable = **Number of dropped calls**
 - c. Control = **3 calls made without aluminum foil**

8. Heidi is a chocolate lover and eats chocolate daily. She has a bad break-out and her friend told her eating chocolate causes pimples. Heidi continues to eat chocolate every day for 2 weeks and counts the number of pimples she has on her face. The following 2 weeks she doesn't eat any chocolate and counts the number of pimples on her face.
 - a. Independent Variable = **2 weeks not eating chocolate**
 - b. Dependent Variable = **Number of pimples**
 - c. Control = **2 weeks eating chocolate**

9. Ruthie has a pet goldfish. After several months the goldfish quits growing. Ruthie's Mom told her the goldfish might have stopped growing because the tank is too small. Ruthie measures the size of her goldfish in its current tank, and then puts the goldfish in a larger tank. After 2 months the goldfish is now 1cm longer.
 - a. Independent Variable = **Size of the fish tank**
 - b. Dependent Variable = **Length of goldfish**
 - c. Control = **No control**

10. Nicholas has been biting his nails since he was a kid. He wants to break the habit so he puts bitter tasting nail polish on his left hand and leaves his right hand without polish. After 3 days he notices his nails on his left hand have grown but he continued to bite his right hand nails.
 - a. Independent Variable = **Bitter tasting nail polish on left hand**
 - b. Dependent Variable = **Length of fingernails**
 - c. Control = **Right hand with no polish**

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Thanks,



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