

Passwords 1: Role of Passwords

Grade Level: 4-5

Objectives:

1. Students will learn the role passwords play in protecting information.

Materials:

4 copies of the Team Secret Information Cards

Procedures:

1. Split the classroom into four teams. Tell the students that they are competing companies who are trying to build the first “Hover Craft Car” for families to use. Each group has one of four parts to the design of the “Hover Craft Car”. They need to find out the others plans in order to complete their design.
2. The teams will all be distributed four cards that have their team name and secret design. (The teams each have four cards in case more than one team successfully accesses their information)
 - a. Hover Builders and Co.
 - b. Hover Car Inc.
 - c. Flying Vehicles Inc.
 - d. The Hover Craft Company
3. Distribute to each team the secret plans that they are to protect. The only way for anyone to see the secret plans is to enter the password. The classroom teacher acts as the login station and allows only the people who have the correct password to view the plans.
4. Have students work in their group to come up with a four part password that uses only the numbers, “1, 2, 3, and 4.” They may only use each number once in their password. (Example: 3214)

5. Once the students have come up with their password they turn in a sheet of paper to the teacher that has their team name and password on it. The students also turn in their cards with their secret plan for the teacher to protect.
6. Tell students that their goal now is to try to figure out the other companies’ passwords and attempt to access their information. Explain to students that in order to access information they must say the company name and then write the company’s correct password and hand the password to the teacher.
7. If a team attempts to access another team’s password but guesses incorrectly, one number (in its correct position) of the guessing team’s password is written on the board for the other teams to see. Inform teams that they should be careful before attempting to access another team’s information and to keep track of the access attempts that they make for each team.
8. Allow the teams to do the activity until one team has successfully accessed all the other teams’ information.

Closing:

Discuss with the students the role that passwords played in this activity. How did passwords successfully stop intruders from seeing the valuable information of your company? What types of information could a password protect?

Indiana Academic Standards:

Grade 4:

Language Arts:

4.7.1 Ask thoughtful questions and respond orally to relevant questions with appropriate elaboration

Math:

4.6.1 Represent data on a number line and in tables, including frequency tables.

4.6.2 Interpret data graphs to answer questions about a situation.

4.6.3 Summarize and display the results of probability experiments in a clear and organized way.

4.7.1 Analyze problems by identifying relationships, telling relevant from irrelevant information, sequencing and prioritizing information, and observing patterns

4.7.8 Make precise calculations and check the validity of the results in the context of the problem

4.7.9 Decide whether a solution is reasonable in the context of the original situation.

4.7.10 Note the method of finding the solution and show a conceptual understanding of the method by solving similar problems.

Grade 5:

Language Arts:

5.7.5 Clarify and support spoken ideas with evidence and examples.

Math:

5.7.3 Apply strategies and results from simpler problems to solve more complex problems.

5.7.4 Express solutions clearly and logically by using the appropriate mathematical terms and notation.

Support solutions with evidence in both verbal and symbolic work.

5.7.8 Decide whether a solution is reasonable in the context of the original situation.

5.7.9 Note the method of finding the solution and show a conceptual understanding of the method by solving similar problems.

5.6.3 Understand that probability can take any value between 0 and 1, events that are not going to occur have probability 0, events certain to occur have probability 1, and more likely events have a higher probability than less likely events.

Team Identification Cards:

Hover Builders and Co. Password: _____

Your company has figured out how to make the “Hover Craft” float in the air. Come up with a password and then return all four copies of this card back to the teacher. Remember your password can only have the numbers 1-4 using each number only one time.

After giving the teacher your password try to figure out the other teams passwords.

Remember if you guess incorrectly a portion of your company’s passwords will be shared with the other companies.

Hover Car Inc. Password: _____

Your company has figured out how to make the “Hover Craft” move forward. Come up with a password and then return all four copies of this card back to the teacher. Remember your password can only have the numbers 1-4 using each number only one time.

After giving the teacher your password try to figure out the other teams passwords.

Remember if you guess incorrectly a portion of your company’s passwords will be shared with the other companies.

The Hover Craft Company Password: _____

Your company has figured out how to make the “Hover Craft” move backwards. Come up with a password and then return all four copies of this card back to the teacher. Remember your password can only have the numbers 1-4 using each number only one time.

After giving the teacher your password try to figure out the other teams passwords.

Remember if you guess incorrectly a portion of your company’s passwords will be shared with the other companies.

Flying Vehicles Inc. Password: _____

Your company has figured out how to make the “Hover Craft” stop once it is moving.

Come up with a password and then return all four copies of this card back to the teacher.

Remember your password can only have the numbers 1-4 using each number only one time.

After giving the teacher your password try to figure out the other teams passwords.

Remember if you guess incorrectly a portion of your company’s passwords will be shared with the other companies.