

Hector's World™—Lesson plan

Episode: Computer security: Oops

Lower primary

BACKGROUND

Very young students are unlikely to fully understand how computers work. They may have limited understanding about the nature of viruses and how these can compromise a computer.

This lesson plan addresses the risks associated with pop-up files and provides strategies for keeping computers safe, including using a strong password. It aims to teach students that some information, like a password, should not be shared. It also highlights the importance for students to turn to a trusted adult or carer for help.

OBJECTIVES

Students will:

1. understand that passwords can help protect computer files and information
2. understand that a file called a virus can make a computer stop working, but parents and caregivers can help prevent this.

CURRICULUM LINKS

This lesson plan supports the National Framework for Values Education in Australian Schools, including the Nine Values for Australian Schooling. For more information, visit:

- www.valueseducation.edu.au/verve/resources/Framework_PDF_version_for_the_web.pdf
- www.valueseducation.edu.au/values/val_national_framework_for_values_education,8757.html

This lesson plan can be used in any of the following subjects and topic areas:

- the arts
- communication
- health
- identity
- personal development
- science and technology
- SOSE/HSIE.

Although this lesson may stand alone, students will find it easier if they have been introduced to the Hector's World™ characters and that the lesson is used within the context of a unit on Hector's World™ and online safety.

There are two episode images you can use to help students understand, and two activities to reinforce the lesson concepts. You should print, copy and prepare these before the lesson. They are included at the end of this plan, along with additional extension activities and learning links.

This lesson plan involves identifying some of the characters' traits. This will be easier for students if they have viewed previous episodes. Episode 1: Details Details... provides a good introduction to the characters.

The episode contains two 'Pause points'  to provide an opportunity for classroom discussion.

Introduce the animation to the class by asking who is familiar with Hector's World. Allow the students to share some of their previous knowledge about Hector and his friends.

Explain, to anyone who is not familiar with the resource, that Hector and his friends live under the sea in Silicon Deep. They have lots of technology, like computers, because a cargo ship that was carrying the items sank. Now they are learning about how to help each other and how to use the technology safely. This episode is about a computer virus.

Ask students the question: 'Does anyone know what a computer virus is?' Acquaint students with the term through a short discussion. Some students at this age may know the terms 'virus' or 'pop-up window'. They may have a basic understanding that a virus can make a computer 'sick' or that a computer virus can cause a computer to stop working properly.

Record new or unfamiliar vocabulary arising from the discussion on the board.

Explain the outline of the episode: 'In this episode, Sprat's computer gets a virus just as his friends are about to watch something very special on it. Sprat will need some help to get the problem sorted out.'

ACTIVITY

1. Before viewing the animation

Show students the picture of the 'pop-up window' from the episode (Image 1, below). Ask students to look for this 'pop-up window' scene and watch closely what happens to the computer.

2. View the animation

View Hector's World Episode: Computer security: Oops.

A pause point symbol  will appear in the episode in the lower right corner, three seconds before the point to stop the video.

Pause point 1

At the first pause point, stop the animation and allow students time to digest Sprat's problem and share some ideas about possible solutions.

Ask the students:

- What do you think has happened to Sprat's computer?
- What did you see just before the computer broke?
- All Sprat's friends have come to watch something special on his computer.
- Now the computer has stopped working. How do you think Sprat feels?
Use Image 2 (below): How does Sprat feel?

Create a list of words on the board or large paper that students use to describe Sprat's feelings. This list will be used later in the lesson and is likely to include: unhappy, scared, worried, afraid, sorry, sad, upset, tricked, bad. Ask students if they can make a face that shows how Sprat felt.

- What can Sprat do to solve his problem?
- Who can Sprat turn to for help?

Additional questions:

These will explore Sprat's need to find a resolution quickly and how this might make him feel.

- What could happen if Sprat tries to fix the computer himself?
- What could Sprat say to his friends who are here to watch the concert?

Depending on their age, teachers may want to explore students' understanding of computer passwords. See *Password activity*, also below.

- What is a password?
- What did Tama imagine when Sprat said his dad uses a **strong** password?

Resume the animation.

Pause point 2

At the second pause point, stop the animation and allow students time to digest the question and share some ideas.

Ask the students:

- How is Sprat feeling now?
You can refer students back to the original list.
- What could Ranjeet say to make Sprat feel better?
Using the list created at Pause point 1, ask students what Ranjeet could say if Sprat is feeling, for example, *unhappy, scared, worried, afraid, sorry, sad, upset, tricked, bad*.

Conclusion of the animation

Immediately following the viewing, briefly discuss what happened in the animation focussing on Sprat's advice at the end and Sprat's strategy to solve the problem. New vocabulary and the list of words describing how Sprat felt will aid the discussion.

Key points in the episode are:

- Sprat's Dad used his strong password to log onto the computer.
- Sprat clicked on a pop-up window.
- A virus caused Sprat's computer to stop working.
- Sprat sought help and did not try to fix the computer himself.
- Sprat's friends helped him to feel better.

3. Review and consolidation of learning

Student activity 1: What happened next?

Print and **copy** several sets of story pictures, depending on class size. Each picture highlights a key point in the story.

Organise students into groups of two or three and give each group one picture. Ask students to look closely and think about what is happening in their picture. Several pairs can be called on to describe their picture for the class. The teacher can encourage students to describe how the characters might be feeling in their picture.

Tell students they will now work as a team to arrange all the pictures in the correct order to re-tell the story.

This can be done in several ways using an adhesive on the wall. Placing images temporarily on the wall will give students an opportunity to reflect on the key messages in the story over several days. Alternatively, groups can arrange the pictures in a line on the floor or student pairs could hold up their pictures and line up in the correct order.

The teacher can assist by placing the first picture for group. The teacher can prompt groups to consider 'What happened next...'

This activity helps students understand the cause/effect relationship of the computer virus and the computer breakdown.

Replay the animation when students have finished so they can check their placement of the story images.

Student activity 2: Using passwords to protect valuable information

SUGGESTED LESSON PROGRESSION

Teacher's notes

A student's first introduction to a computer password may be when they begin using a school network or a shared classroom computer. This activity introduces the concept of a strong password. The activity encourages students to draw a picture that helps them remember their password.

In some school environments young students may share a class password to access a class blog or a shared area of a computer network. Teachers can encourage the use of a strong password in this situation and reinforce the concept that passwords protect files and information that are important to us as a group.

Introduce the activity by determining students' current knowledge about passwords and their purpose.

- What is a password?
- Who uses passwords?
- Why are passwords used?
- Why do people keep their passwords secret?
- What happens when someone guesses a password?
- What is a weak password/what is a strong password?

Often young students will consider using the name of a favourite pet, a birthday or a nickname as a password. It is important to help students understand their friends may already know this information. They may also consider an easy to remember number sequence e.g. 12345 or even the word 'password'. It is important to help students understand the difference between a weak password and a strong password. Some examples could be displayed on the board.

Explain that this lesson will assist students to make up a strong password.

A strong password is made of letters, numbers and symbols combined in a way that no one can guess.

Explain that writing the password down means that someone may see it and it will no longer be a secret password. Drawing a picture can be a way to help remember a password and still keep it secret.

Distribute the 'Make a strong password' activity sheet to students. This sheet is available from the Silicon Deep Workshop at:

www.hectorsworld.com/island/main/workshop_interior_01/index.html.

The activity sheet encourages students to choose words, numbers or symbols from each column and combine them to make a strong password. Students can circle their choices but should try to keep them secret. Students then draw a picture that will help them remember their password and discard the top portion.

Students may know about: Secret Santa, secret garden, secret code, keeping a secret about a surprise. They may know of storybooks or movies where characters keep a secret. These examples can be integrated into the discussion.

Ask the group:

- Is it hard to keep a secret?
- Why do some people have secrets?
- How would you feel if someone finds out your secret password?
- How do we feel if we lose a picture or drawing or a book that was special to us?

Note: For young students, the issue of good secrets versus bad secrets may be addressed. It is important that students understand there are some secrets they must tell a trusted adult. A 'bad secret' may make them feel uncomfortable or frightened, and it is important to turn to an adult for help. A 'good secret' may make them feel good or be a way to surprise someone and make them happy.

EXTENSION ACTIVITIES FOR ALL AGE GROUPS

The following are suggested activities that can be used to further extend students' understanding of computer security and passwords. These are for all age groups so they can be modified to suit individual classes.

Some of these activities use Hector's World resources that are available on the following websites:

Hector's World pages: www.cybersmart.gov.au

Information Island or Silicon Deep: www.hectorsworld.com

1. Invite an expert

Invite the school computer technician or a computer technician from the local community to speak to students about the importance of computer security and what strategies are used to keep the school computers safe. Students might prepare questions in advance.

2. Drama activity

Organise students into groups of six or seven to act out a 'mini play' that retells the story.

A drama activity gives students scope to explore alternative solutions or similar events. Students can use the character cards or character hats to portray each character. These resources are available from the Hector's World pages on www.cybersmart.gov.au and www.hectorsworld.com.

3. Music video and song

These resources are available from the Hector's World pages on www.cybersmart.gov.au

Play the music video *Keep Yourself Switched On* to introduce the class to the music and lyrics.

The song encourages students to keep themselves up-to-date and build their skills. It includes ideas about virus symptoms and virus prevention. Song lyrics can be displayed using a data projector or printed for students to read.

Other ideas

- In groups, students can create movements and dance steps to the song.
- Teach the song to another class. This teaching could cascade across the school until all students sing the song together. That is, the first class to learn the song teaches to the next. Each class teaches another until the whole school knows the song and can sing it together.

IMAGE 1: POP-UP WINDOW

For use before viewing the episode.

This is Sprat the fish. He is using his computer when a pop-up window appears on the screen. Look for this scene in the episode and watch what happens next.



IMAGE 2: SPRAT

For use after Pause point 1.

How does Sprat feel?



STUDENT ACTIVITY 1: WHAT HAPPENED NEXT?

Student groups work as a team to arrange all the pictures in the correct order to re-tell the story.

Cut the images out (removing image numbers).

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