A SMART KID'S GUIDE TO THE ONLINE WORLD OF WONDERS

Set of Potions and Magical Tools for Kids
to Use on the Internet

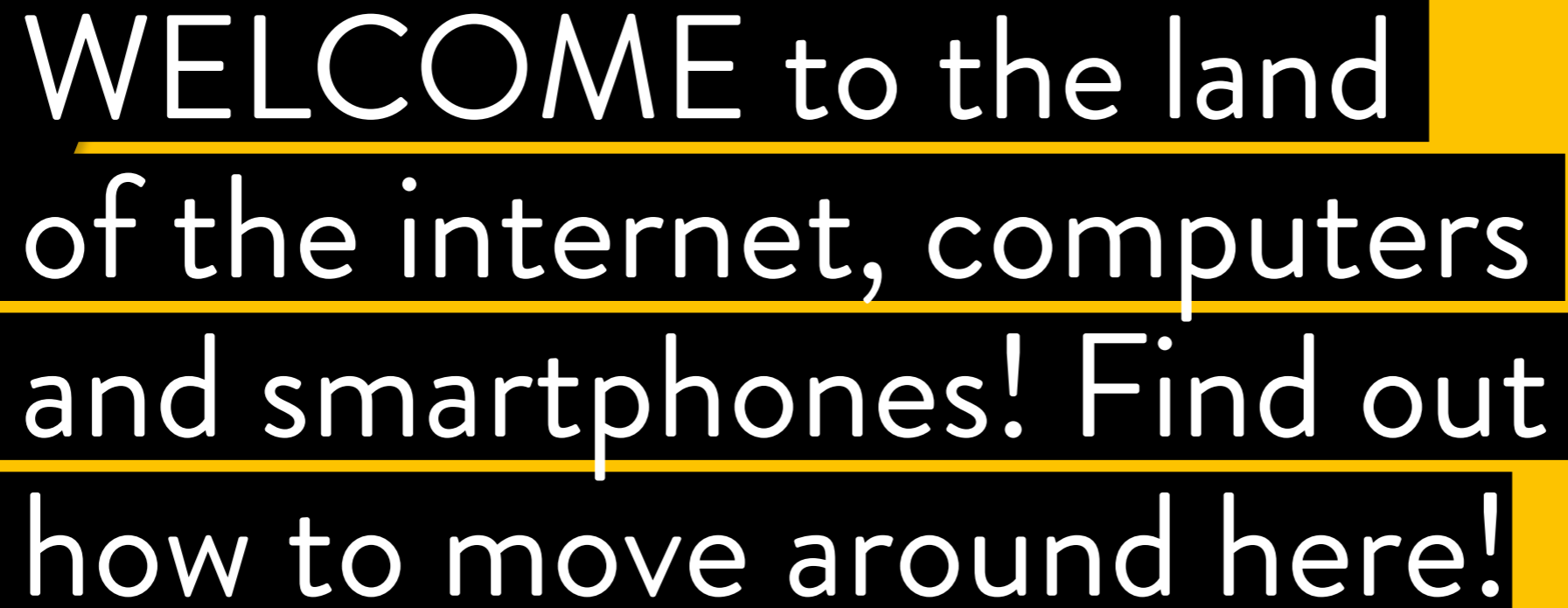Illustrations: Zosia Dzierżawska

PDF

Hi!

The world of the internet is a wonderful and strange land!

It has many fascinating places, interesting inhabitants, fun and games, and information. But be careful – it also has some dangerous areas that you should avoid.

This guide will help you learn many magical things! What the web is made of, what programming is all about, who's lying and who's telling the truth.

What's all this for? To help you freely roam this land.

Get new skills, collect gear, gather potions, and discover how to spread GOOD online while avoiding problems.

WELCOME to the land of the internet, computers and smartphones! Find out how to move around here!

INTERNET MAP

• Take a good look and see how many people in the world use the internet, how many kilometres of cables are needed to move data around, and whether there are still any blank spots on the Earth where you can't get online.

HOW DOES THE INTERNET WORK?

Thanks to the INTERNET, you can read and watch things that people from all over the world are sharing. That's because **the INTERNET is a GLOBAL NETWORK.**

On the INTERNET, you can find almost anything: **Videos, photos and information shared by other people** – and not just by your neighbours and friends.

When you connect to the internet (for example, using your computer or smartphone), you make a connection with another device. This can be a **ROUTER** in your home, or the closest mobile network tower. There are many such devices around the world. They look different and come in different sizes, but they're all connected to each other. **Thanks to this NETWORK, you can send an email to your friend from China and it will reach her within a minute!**

The internet includes a lot of content; much more than in all of the books in the library. This content is everything that is sent between computers: **articles, videos, posts, emails, photos... We call this content 'DATA'.** It all has to be stored somewhere. **This data is held on computers and on SERVERS,** often found in large storage areas called SERVER ROOMS, which are always available. **Modern server rooms can be as big as several football pitches!**

If you were to send a letter on paper, it would take two weeks to get there.

Brussels

North Korea

China

Mount Everest

There are blank spots on the map of the internet. These are places where internet cables and satellite signals don't reach. **You can't get online there.** There is such a blank spot in my grandma's garden. I can't watch an online video there, but I can have a bonfire instead.

South Sudan

They say that sharks sometimes attack internet cables because they're curious about them.

The internet didn't just appear out of thin air. **It exists thanks to a network of cables and wires that wrap around the entire planet. The thickest and longest ones lie at the bottom of the oceans,** connecting continents. In total, they measure almost 1 000 000 (a million) kilometres. If we joined them all together into one big cable, we could wrap it around the Earth's equator 25 times!

Over half of the world's population – around 4 500 000 000 (four and a half billion) people – have access to the internet. **In 2020, people living in Iceland, Kuwait, the United Arab Emirates and Qatar accessed the internet the most, while people from South Sudan accessed it the least.**

You and your friends are the first generation to have easy access to the internet from your earliest days. **In the past, you could only use the internet on desktop computers, which were much larger than laptops.** And if you ask your parents, you'll learn that they didn't have the internet at all when they were kids. **Today, you can even get online on Mount Everest!**

Some countries have no internet at all. **In North Korea, only 1 out of 1 000 people has access to the global network – almost nobody uses it.** Can you imagine a world without songs on YouTube? Unbelievable! This is because **the North Korean government doesn't allow people there to use the internet.** Citizens in North Korea don't know what's happening outside their country.

For something to appear on the internet, someone has to upload it first. Remember that when you're downloading a picture for a geography class presentation or watching a funny video with your friends. These things didn't come from nowhere. **Someone made them and shared them so you could use them – that's why you need to pay for some of them.**

THE KIDS WANT A STORY. DO YOU HAVE INTERNET HERE?

WE HAVE TO REACH VOSTOK STATION.

Antarctica

SEND

PORRIDGE PROGRAMMING

• Yes, you heard that right!
The magic lies in seeing the first
steps of computer programming
while preparing a recipe
for porridge. Maybe you'll use
this magic during your
next breakfast?

PROGRAM YOUR PORRIDGE

EVERY COMPUTER PROGRAM IS LIKE A RECIPE – IT DESCRIBES EXACTLY WHAT THE COMPUTER SHOULD DO.

Writing a program like this is quite a lot of work, which is why they are usually sold for money. However, there's also **FREE SOFTWARE.** What this means is that everyone shares their recipes – for free!

Thanks to this, programmers don't have to create everything from scratch each time.

They can use recipes (programs) written by someone else. They can change them, improve them, and share their experiences.

There's no obligation to share your programs, just like there's no obligation to share recipes – and many people don't. However, when you publish your recipes, you help not only others, but also yourself – anyone can give you hints on how to improve them, or tell you what other ingredients go with your creation.

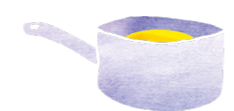You can **DISCOVER SOME REAL TREASURES** by sharing with others.

text: Maria Górska, graphic design: Kaja Makacewicz

DON'T FORGET TO SHARE YOUR RECIPE WITH A FRIEND!

I heat up the milk,

I add the oats,

and cook for a few minutes until the oats are soft.

YOU CAN CHOOSE THE INGREDIENTS YOU LIKE, AND ADD SOME THINGS YOU THINK OF YOURSELF. THIS WILL BE YOUR PORRIDGE PROGRAM.

I like to add **COCONUT FLAKES AND SLICED ALMONDS** to my oatmeal. It tastes like a biscuit!

I'm lactose intolerant, so I cook my oatmeal **IN WATER.**
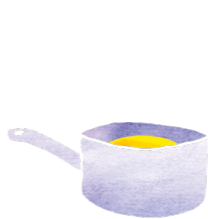
I love the combination **OF BANANAS AND DARK CHOCOLATE.**

I slice an **APPLE** and add some **CINNAMON!** Yummy!

That's how open software works – everyone can add something and the program gets better and better. And that's what it's all about!
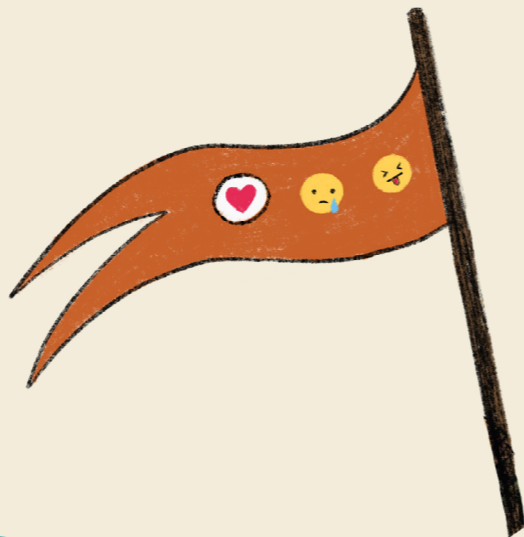
BUG DETECTION

• Become a debugger.
Play a game that will show you
what finding errors in a computer
program is about.
It's an important skill for people
who want to change the virtual world
for the better. Bzzzzz!

Find the
BUG

Game

How much harm can one little bug do? Quite a lot, as it turns out as US Navy programmer Grace Hopper discovered.

In her time (half a century ago), there were only a few computers in the world, and each of them cost a fortune and took up a whole room. There was no screen, no mouse, or even a keyboard. How did people use computers like that? They needed a very long tape (like the one in the picture) and a hole punch. The computer turned the holes into zeros and the breaks between them into ones.

Unfortunately, one day the computer started making mistakes! The calculations it was making were coming out all wrong. Grace and her team counted the holes once, twice, and even three times because they thought they had accidentally put one in the wrong place. They couldn't find any errors, but the result was still incorrect.

So what went wrong? It turned out that a moth had flown into the computer and got stuck there, causing the computer to start making errors! Once the moth was found and taken out, the machine started working correctly again.

Ever since then, the process of looking for errors in a computer program is called "debugging" – finding and removing the *bugs*.

A LOOONG TAPE

GRACE HOPPER

HELP GRACE AND FIND THE BUG IN THE INSTRUCTIONS

Try to make your way through the tape following the arrows. You did it, right? And now look at the instructions. The arrows in the instructions should show you how to reach the X and avoid all the holes in the tape. Unfortunately, a careless bug got into one of the arrows and now it's pointing the wrong way.
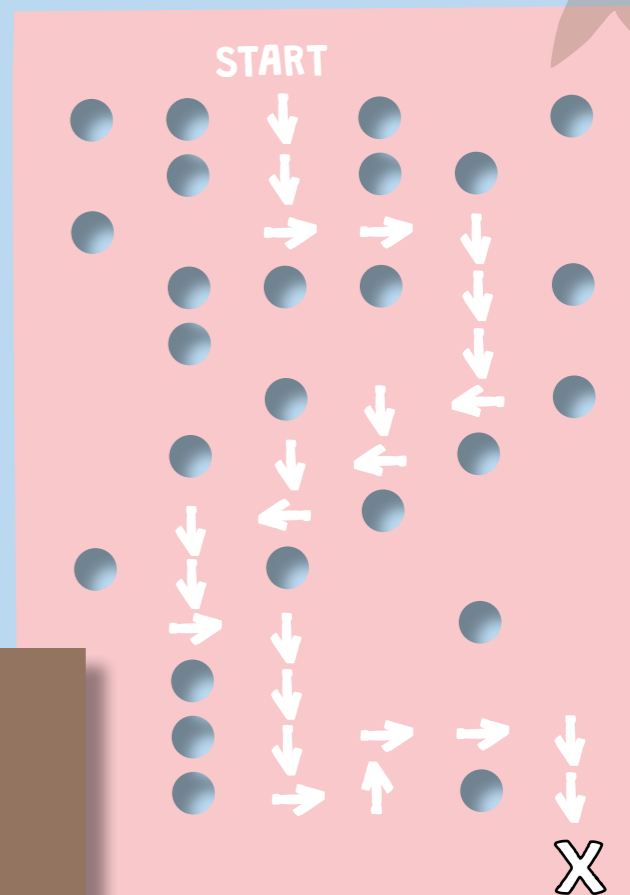
Find and mark the arrow that's wrong.

TAPE:

START
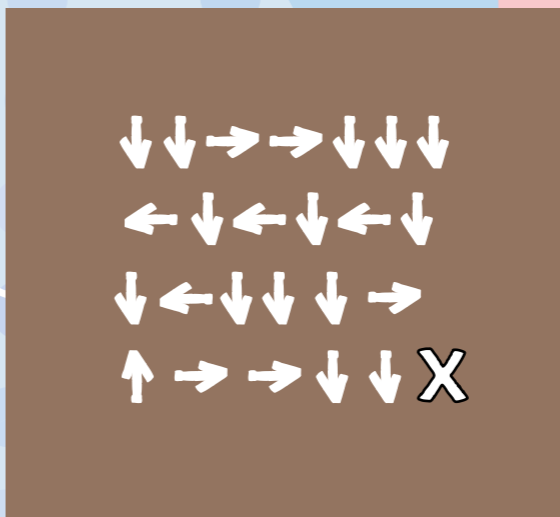
INSTRUCTIONS:

BRAVO! THIS IS WHAT DEBUGGERS DO! THEY COMPARE THE INSTRUCTIONS WITH WHAT'S ACTUALLY HAPPENING AND FIND THE ERRORS.

Learn about the customs of the inhabitants of the online world!

THE POWER
OF CLAIRVOYANCE

• Drink the potion and see who you can meet online, who it's worth talking to by email, on forums and in messenger apps, and who should be avoided.
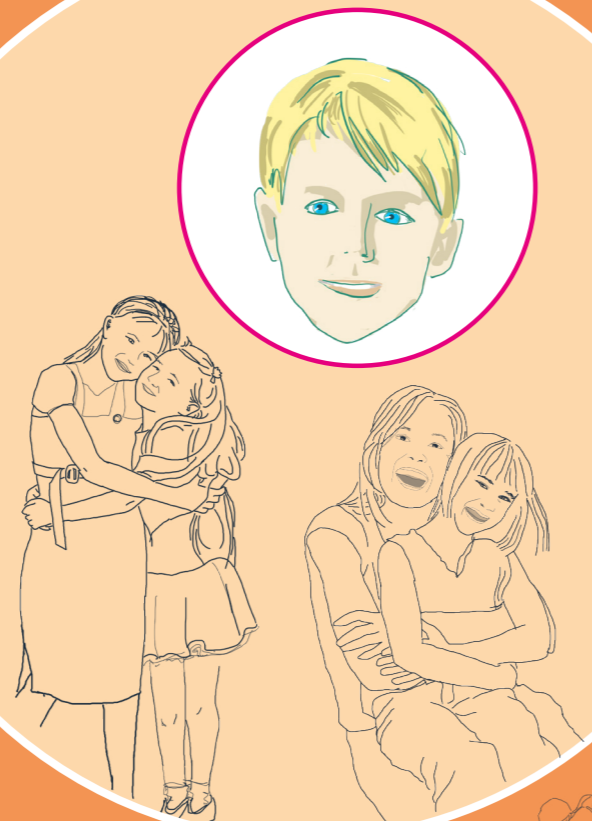
WHO CAN I MEET ONLINE ?

People who use the internet. That's practically everyone! But not everyone is equally close to you. You can imagine people in circles around you. From those closest to you, with whom you want to share almost everything, to total strangers. On the internet, you control who can enter into the circles closest to you. **You also decide what you want to share with people from different circles. See how to do it!**

In the third circle, you'll come across people you know, but around whom you should watch what you say. These can be distant acquaintances and people you barely know. There are places online where both you and they can go. For example, **a forum – a place where lots of different people talk about a particular subject.** If you set up a thread called "maths homework" on a forum, you can discuss the assignments with other students. Just remember, **whatever you write on a forum can be seen by anyone who registers there** – and you might not know them! **The same goes for social media sites.** If you post something there, it could be seen by a distant uncle, your teacher, or other kids your age. Remember: **whatever you post on the internet stays there forever!**

3

HI, THIS IS GINNY FROM YOUR CLASS.

1

First circle – the people closest to you. In the real world – they are your family and best friends. You can also communicate with them through the internet. **Messages** to them are safest; they'll only reach specific people. You can also add a photo or a video to the message. **You can send it by email or a messenger app – a tool for sending short messages.**

Access to your account is protected by a **PASSWORD**. This way, your friends can be sure that they're talking to you.

2

In the second circle are people you also feel comfortable with, but you might not tell them everything. For example, they are your classmates or friends from your neighbourhood. You can talk about school, sports, videos, or birthday parties. This circle also includes more distant family members who you see for the holidays, and you tell them about your trip to the mountains. There are also places to have conversations about these types of topics online. These are called **email groups, where one message goes to several people at the same time, or closed groups on a social media site** – a website where many people have accounts and communicate with people they know. When you write something there, only people in the group will see it. **You decide whether you want to invite someone new into the group!**

Have you ever talked to your friends on the bus while surrounded by strangers? **The fourth circle includes people you don't know personally.** This includes most of the people you can meet online! If you post **a comment on a YouTube video**, anyone can read it. Just like when you write on **an open forum: it's like talking to complete strangers. On the internet, there is always a living person on the other end.** A mean comment can make someone sad, and if a stranger is writing to you, they aren't always who they say they are.

4

Sometimes you want to share your achievements with the whole world – when you win a photo competition, score a goal, teach your dog to jump over obstacles, or create something you're proud of. **There are also places to share your achievements on the internet. You can publish a public video on YouTube** about what you like to do. You can also set up **a blog: a page where you can publish posts, that is messages and photos about a specific subject.** This way, many people can find out what you do, and appreciate it. **But be careful – when you publish something,** you open yourself up to other people's judgements, and the comments may not always be nice. Some people write them without thinking so you shouldn't take them seriously. Always think carefully about what you want to share with the whole world, and what's better kept to the closer circles.

5

TO CREATE AN ACCOUNT ON FACEBOOK, YOU MUST BE AT LEAST 13 YEARS OLD.

Most sites where you share things have **PRIVACY SETTINGS**. You can use these to make sure that a stranger doesn't get into one of the closer circles. Ask an adult to help you set them up!

DISPEL MAGIC

- Use this charm when you're not sure whether the person you're interacting with or following online is telling the truth and isn't a liar.
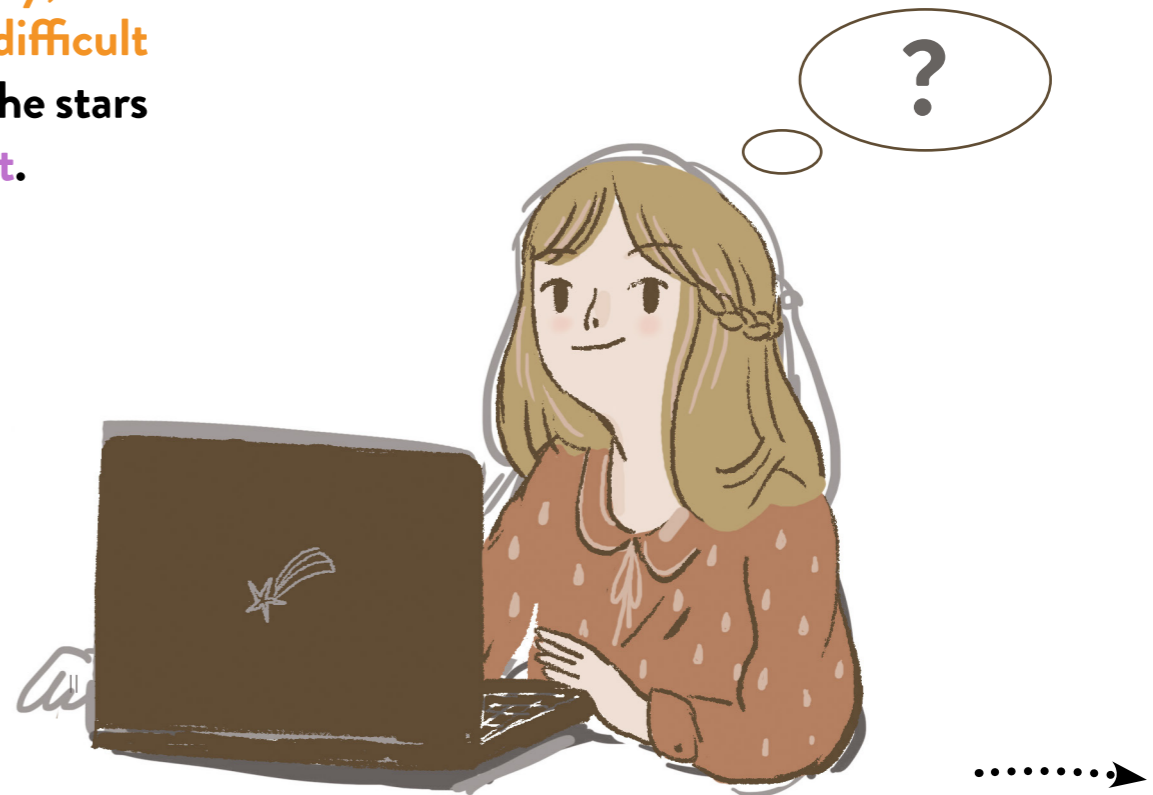
ASK A STAR

Stars aren't only found in space. Some of them live on Earth – these are people who have achieved something, as well as those who are well-known and liked. Stars talk about lots of things **in interviews, on their YouTube channels or on TikTok. But they don't say everything.**

To find out more, you can be a reporter! These are people who think critically about what they see and hear. This means they **consider it carefully, and when they have doubts, they ask questions – sometimes even very difficult questions.** On the next page, check out what questions you can ask the stars to find out more about their work – and what **they don't tell us about**.

You can ask the same
kinds of questions in your head.
That's what we call
critical thinking!

**SEE WHAT YOU CAN
ASK A STAR ABOUT**

Remember: your wardrobe must be full. You can't wear the same thing to school twice!

Where do you get so many clothes? Does someone give them to you for you to advertise?

And if not, where do you get the money for them?

I often wear my favourite t-shirt to school; what's so bad about that?

THE FASHIONISTA'S CHOICE: WHAT TO WEAR TO SCHOOL?

Here are a few tips to make sure our drawings are always beautiful!

How do you decide which drawings are beautiful?

There are many standards in art, and different artists have totally different styles.

What makes a drawing ugly? Why judge it at all?

DRAWING_WITH_LOTTA: HOW TO DRAW BEAUTIFULLY

I had to start a dozen times to get through this level. It was a long night.

How did you get up for school after a night like that?

How do you find the time to play so much? You upload videos nearly every day. Do you ever meet with your friends in real life?

Did you really get through all these levels by yourself? Or does someone help you?

HARDEST LEVEL: ALL-NIGHT CHALLENGE

"ALL-NIGHT CHALLENGE" IS AN ALL-NIGHT CHALLENGE.

When I look for food in the jungle, I have to be careful not to get sick. Food poisoning during an expedition when you're all alone can be deadly.

Are you really alone? Who's filming you? What does your crew eat? How did you get there with all your filming gear? When you're not filming, do you really not talk to the others and eat what they are eating?

"HERMIT GIRL", EP. 14: ALL YOU CAN EAT

WOW! A sweet moment on the pitch!

Don't you have to eat well when you're an athlete? Shouldn't you eat healthy things? Do you really eat these bars before a match, or do they just pay you for recommending them?

SUPERBAR: THE BEST THING BEFORE A MATCH!

The best day ever, as always! Even more fun tomorrow!

Do you really have fun and do all these cool things all day? What about when you're editing the video?

That's a lot of work. Does nothing sad ever happen to you? You're never tired or not feeling well in a video?

**DAILY VLOG #73: ALL DAY ON THE SKATEBOARD!**

WHAT WOULD YOU ASK YOUR FAVOURITE STAR ABOUT? You can be a reporter, too, and ask important questions. But remember, like any other person, stars have a right to privacy too. They don't have to answer your question, especially when it's about their personal life. Don't be afraid to think critically about what you see in their videos!

SEE THROUGH THE MASK

• There are lots and lots of photos on the internet. Some of them are funny, some show the beauty of the world and people, and some are fakes or only show part of the truth. Good hackers know how to look carefully.
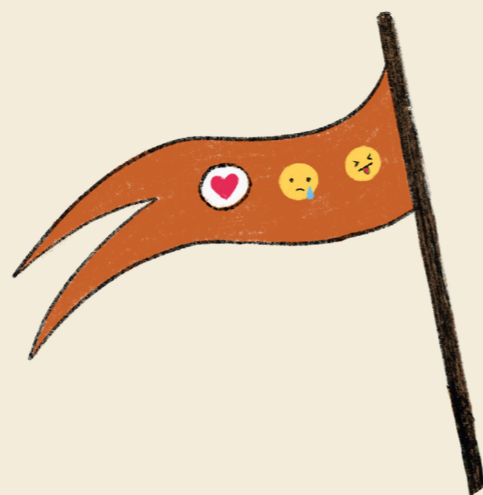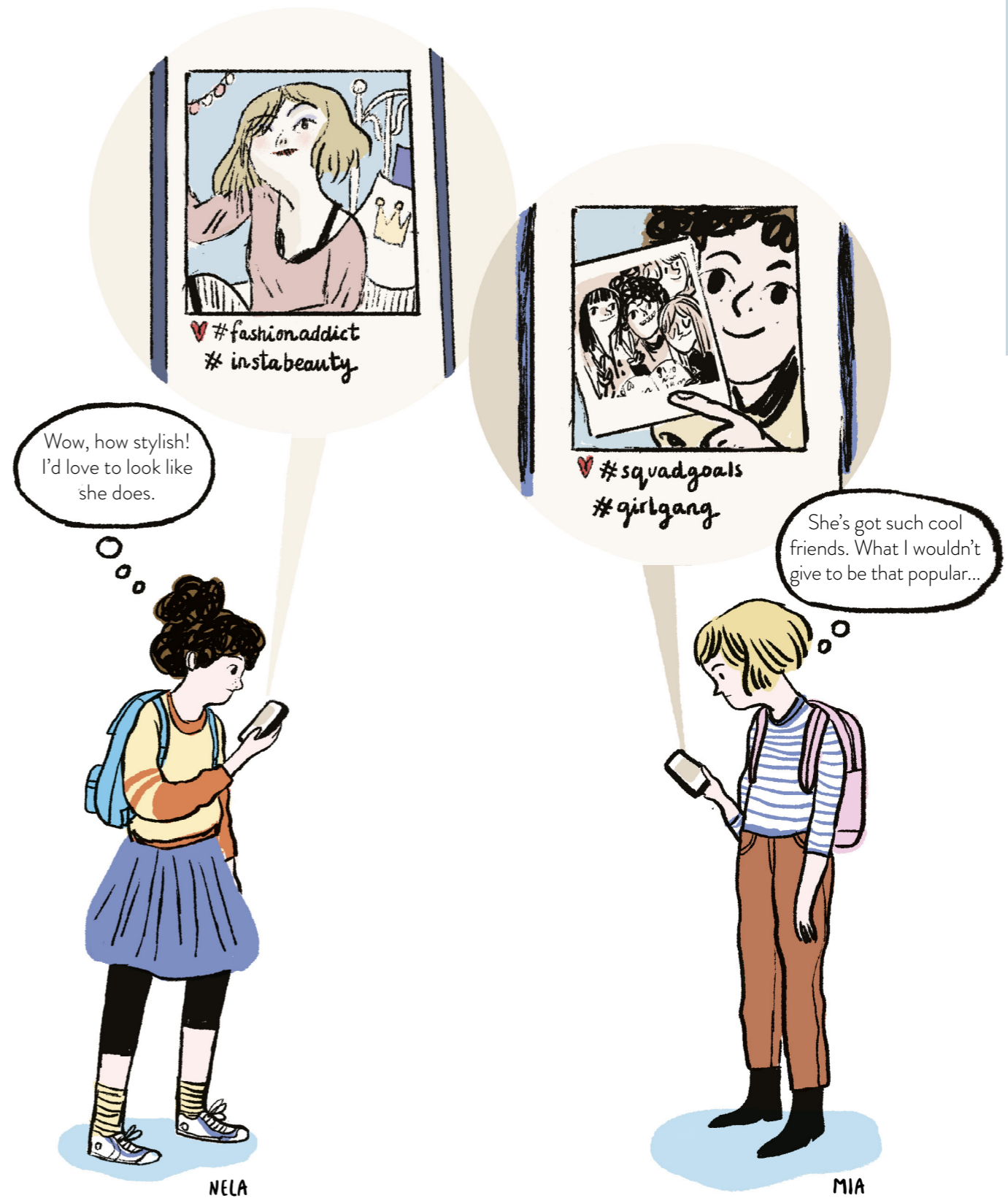
WHAT'S THE SELFIE HIDING?

Sometimes, looking at another person's pictures makes us feel jealous.

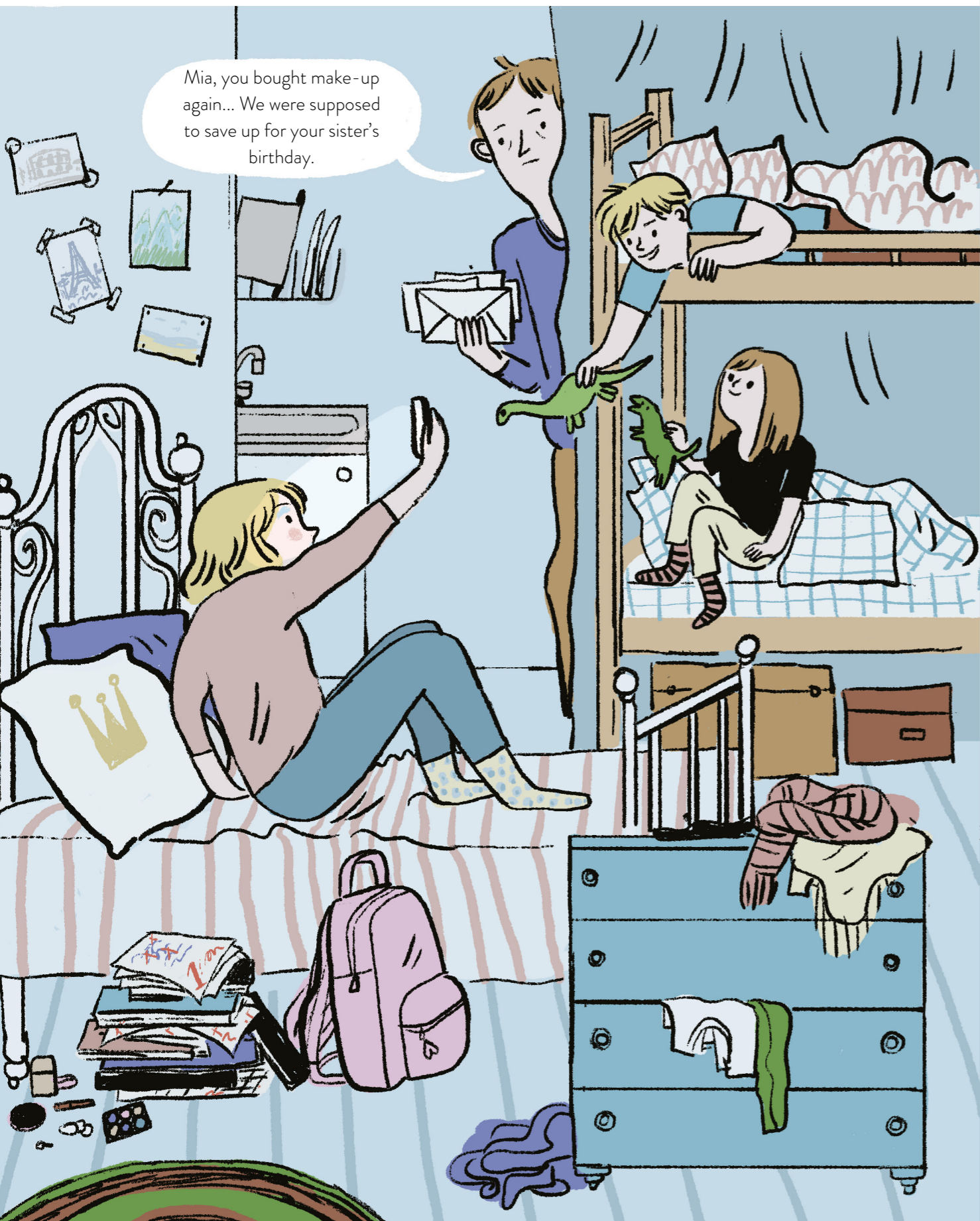See what Mia and Nela think when they see their selfies from yesterday.

♥ #fashionaddict #instabeauty

Wow, how stylish! I'd love to look like she does.

♥ #squadgoals #girlgang

She's got such cool friends. What I wouldn't give to be that popular...

NELA

MIA

Photos don't show everything! Look carefully.
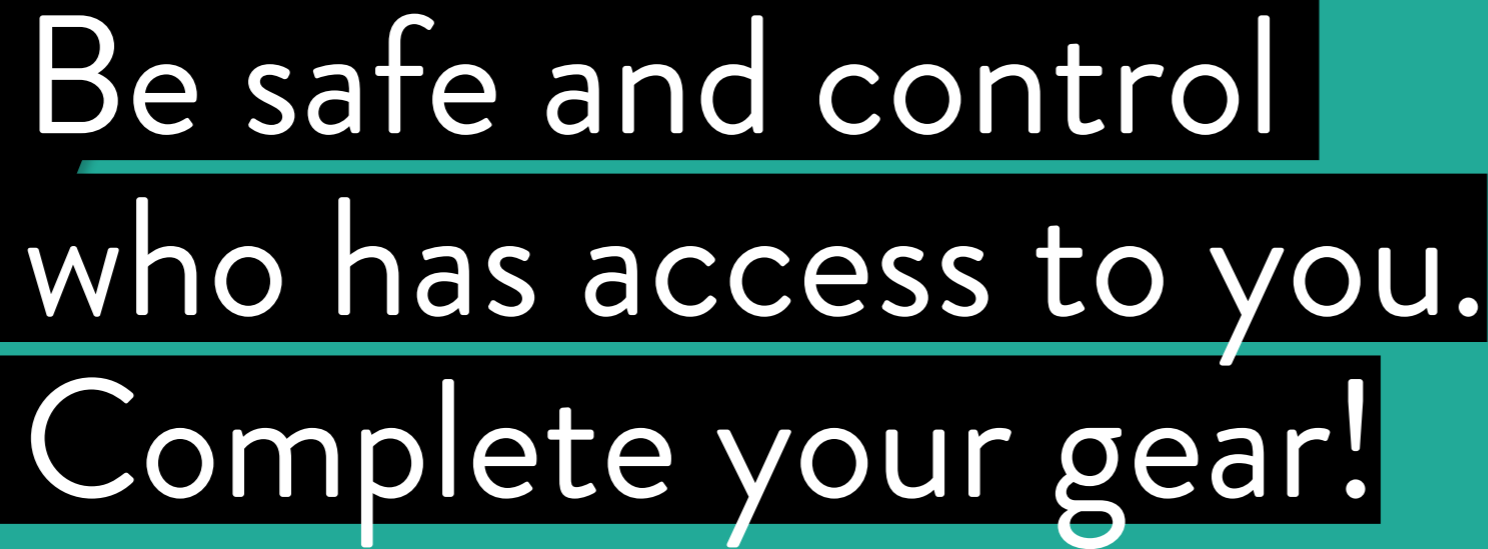
See what's happening in the girls' homes – things you can't see in selfies. Oof, that's a lot.

There's no point comparing your pictures to others. A selfie is only one of the masks we wear every day.

IT'S BETTER TO TALK TO EACH OTHER.

Be safe and control who has access to you. Complete your gear!

SMART BOT

- You gain an ally.
The bot, which has just come
online, will tell you about
the traps that lurk in phones
(yours/your mum's/brother's/
aunt's/friend's), and what
you should watch out for!

What is your PHONE hiding from you?

THE BOT IS ONLINE

Hey there! There are hidden traps in every phone. In yours, and your mum's, and your friend's, too. Don't get caught! I know these traps better than anyone because I live in a smartphone. I'm a bot – an internet robot. I'll tell you about all the traps I've discovered so far. Follow me!

When you download an app, look carefully to see if you need to pay for it. Sometimes apps are free to download, but then it turns out that in order to use them fully, you have to purchase additional functions – for actual money. Every app tells you what it needs to work when you're installing it. If it asks for access to your texts, microphone, contact list or camera, it might be trying to get too much from you! Does a colouring app really need access to your microphone?! No. Watch out for this! It's best if you don't download apps by yourself – do it with your parents.

Set up a password so a stranger can't go through your phone. You can share it with someone you trust or write it down and hide it somewhere safe. Passwords can be more than words – some involve connecting dots in a pattern.

Sending and receiving messages – it's great! As long as you communicate with people you want to talk to. You may also receive suspicious messages from strangers. Don't fall into their trap. Don't answer them, and do tell your parents. And when you write to someone, remember: you'll never be able to delete the message! It will stay on the other person's phone.

You only watch the videos you want, right? Not necessarily. YouTube suggests videos to watch. You may think you're making all your own decisions, and then you're caught in a trap! It's the same on TikTok. If you see something gross or scary, something you don't want to watch, turn it off and tell a trusted adult about it.

Did you know that when you're writing an email, the app analyses what you write? It monitors what words you use and who you're sending it to. Messenger and other apps do it, too. Your messages aren't really private. It's best to discuss truly important things face to face.

Your smartphone remembers everything you do online: what pages you visit, who you give likes to, what you watch, and what you want to buy. It collects this data to – for example – personalise adverts to match your interests. Before you know it, you can fall into a trap: you'll want a toy because your phone told you, not because it's cool.

Many apps are designed to make it hard for you to close them. They eat up your time. You scroll and scroll and scroll. It's not worth spending your whole life on your phone.

Instagram, Facebook, TikTok, YouTube and WhatsApp – these are social media apps. Be careful – most of them are for people 13 and older! If you're already using them, remember, you're not anonymous. If you write something unpleasant in a comment or a post, it'll be just as painful and hurtful as if you said it in the real world. Always think about whether you'd like to read something like that about yourself!

When you share a photo from your phone on the internet, it will stay there forever, even if you delete it. Every photo can be downloaded and edited; something can be pasted or drawn onto it, and then be used as a meme. This also means photos in which you or someone else is doing something silly. To avoid falling into this trap, think carefully before you share a photo online.

That's a lot of traps, isn't it? Don't worry, you can avoid them all. Remember them, and you'll be able to use your phone without any problems. I'm logging out, good luck!

THE BOT IS OFFLINE

MESSAGES
SETTINGS
SHOP
EMAIL
YOUTUBE
INTERNET
GALLERY
INSTAGRAM
TIKTOK

CLICK CLICK CLICK
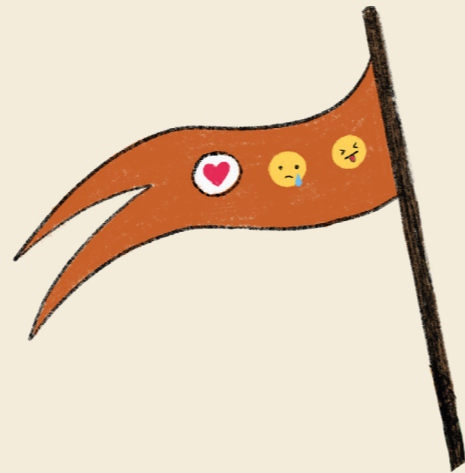
SEE THROUGH THE SCAM

- Not all information you see on the internet is true. Can you catch the made-up stuff? It's worth looking for verified information and it's worth fighting for it. It makes it easier to find your way in the world.

TRUE OR FALSE?

You can find lots of information online! But not everything you find is true. False information, which has reached many people and become very popular, is called fake news . This means news that is not true in English.

Look at examples of information you can actually find online.
Which ones do you think are true and which ones are false?

You'll find the answers at the bottom of the page.

Where does fake news come from? Some of it comes from someone sharing incomplete or changed information. Others were made up specially to benefit someone (for example, to get people to visit a website that makes money on ads). Sometimes people make up fake news as a joke!

A panda pretended to be pregnant to get more snacks.

MORE FOOD, MORE FOOD, MORE FOOD.

In a zoo in Taiwan, there is a panda that appeared to show signs of being pregnant. She received additional care and many snacks. However, tests showed that the panda wasn't expecting a baby at all. The zoo staff suspect that the panda pretended to be pregnant because she noticed that other expecting pandas were receiving more food.

1

Lolek the Whale swam to Warsaw.

WARSZAWA

AHOY, MERMAID, HERE I COME!

Spotted in the Baltic Sea, the whale found a way to swim up the longest river in Poland – the Vistula. He made it through a dam without a problem when a worker opened the locks for him, all for free, of course. Observers expect that Lolek will reach Warsaw, the capital of Poland, in the next few days.

2

An elephant carried a lion cub to a watering hole.

WHAT A NICE ELEPHANT YOU ARE.

Staff at the Kruger National Park in South Africa shared a photo of an elephant carrying a lion cub in its rolled-up trunk. It turns out that the elephant came across a lioness and her cub, who did not have the strength to reach the watering hole, and it decided to help the baby in need. We can learn a lot from animals!

3

A pair of male penguins adopted a chick.

HI DAD, HI DAD!

Penguins mate for life, just like people. Sometimes they form homosexual couples with individuals of the same gender as themselves. In a Danish zoo, a pair of male penguins took care of an abandoned baby penguin. They were sad when he returned to his parents in the end, so the zoo staff gave them an egg to care for. The staff confirmed that the new fathers sat on the egg to incubate it and took care of the chick after it hatched.

4

Answer 1. True. The zoo staff confirmed that the panda was not pregnant. The news said that the reason given for the pretend pregnancy was just guesses by the staff.

Answer 2. Fake news. The whole story of Lolek the Whale was made up by a Polish tabloid!

Answer 3. Fake news. The photo shared on the page of Kruger National Park was edited! It was an April Fool's joke.

Answer 4. True. Penguins really do form same-sex couples, and the story from the Danish zoo was confirmed by the staff.

STRONG PASSWORD

• It's a super effective weapon! Protect access to yourself and your data, photos, emails, messages and homework. A strong password will help you.

PASSWORD
FROM THE LAND OF ICE

What should you do to stop people from breaking into your mailbox and reading your email? It's simple – you need a good password!

If you use the name of your pet or your birthday, someone who knows you could guess it. If it's too short, it could be cracked by a special program written by computer hackers. That's why **you need to come up with something really unique.** It could be a word that's not connected to you – or better yet, four words like that.

Why four? The longer the password, the longer it takes for a program that tries different combinations of letters, digits and characters in turn to guess it. To protect yourself, you can add a number or a special character (like an exclamation mark) to your words.

But what really matters is the length of the password!

How long does it take to crack a password? If the password contains
5 characters – less than a second
7 characters – a few minutes
10 characters – a few hours
15 characters – hundreds of thousands of years

For example, if you come up with the words:

catapult   herring   queen   iceberg

you can make up the sentence "the queen threw a herring into the iceberg." You'll write your password like this:

thequeenthrewaherringintotheiceberg

You can also add a number to the password, just in case.

Get to work! Think of a crazy word. Write it down. Then come up with a second, third and fourth word like that. Put them all together into a sentence, then write it down. And there you go – that's your password! Keep it secret; don't take it to school.
To make it easier to remember, you can draw a picture with all four things in it. Just remember not to show it to anyone!
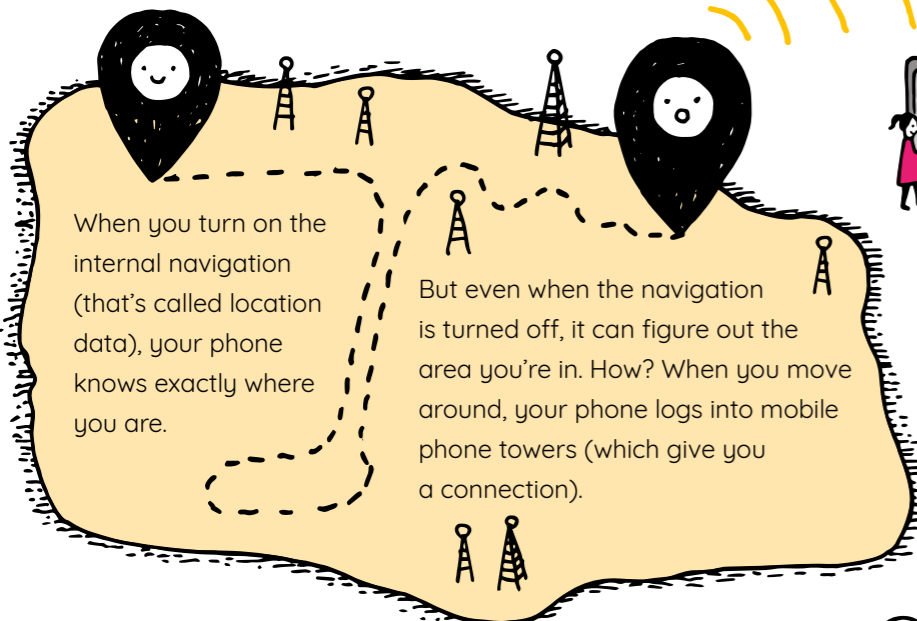**Ready to give it a try?**

MAGICAL PLUGINS

• You decide what others on the internet know about you. Don't leave traces of yourself laying around. They could fall into the wrong hands!

YOU HAVE A DETECTIVE IN YOUR POCKET!

What does your phone know about you? A lot! It's like a detective that doesn't have to follow you around, because you make sure it doesn't get lost.

When you turn on the internal navigation (that's called location data), your phone knows exactly where you are.

But even when the navigation is turned off, it can figure out the area you're in. How? When you move around, your phone logs into mobile phone towers (which give you a connection).

The mobile network records and stores information about the calls you make and text messages you send, as well as information about who you send them to.

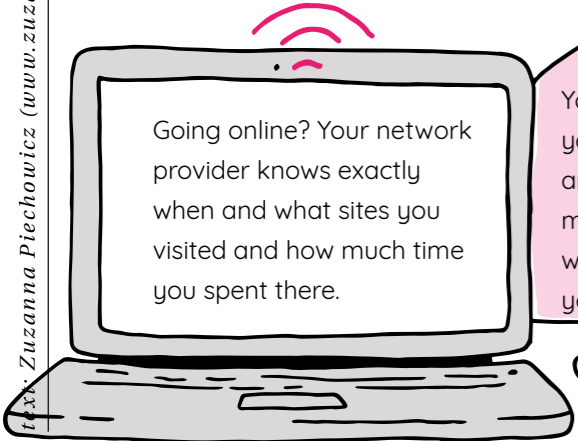Going online? Your network provider knows exactly when and what sites you visited and how much time you spent there.

You keep your photos on your phone, as well as in the cloud and various applications, and they make it easy to determine where you were, what you were doing, and what you like.

Paying with your phone?

Listening to music?

Counting your steps?

Editing photos?

We could go on and on.

REMEMBER ONE THING! THE DATA THAT APPLICATIONS AND MOBILE OPERATORS COLLECT ABOUT YOU IS VERY VALUABLE. KNOWING WHERE YOU GO, WHAT YOU LIKE OR WHAT YOU BUY HELPS COMPANIES MAKE MONEY OFF OF YOU. FOR EXAMPLE, A COMPANY WILL KNOW EXACTLY WHAT ADS TO SHOW YOU.

What can you do about it?
• Be aware of it. That's already a lot.
• Read the terms of service of the applications you install and ask yourself if you agree to let them access your photos, contacts or location. Do you really need these applications? Maybe you can use them without giving permission to access some of your data?

Digital footprint
WHAT IS THAT?

It seems that everything you do online leaves a trace. Specialists call this a digital footprint. It's practically impossible not to leave one – no matter whether you're using a phone, tablet, or computer.

How do we reduce our digital footprint?
Start by installing plugins (add-ons for web browsers) that reduce your digital footprint.

Where do we look for plugins? Look for "add-ons" or "extensions" in your browser's settings. If you have any trouble, just type one of these words and the name of your browser into Google. You can decide which plugins to install with a grown-up.

For example, you can install:
• **Adblock** – blocks ads on websites.
• **Disconnect** – blocks some tracking scripts.
• **Better Privacy** – makes it easier to remove cookies, which contain data saved on your device about the sites you visit. This data is also sent back to the sites (for example, what you purchased online). Cookies can also be removed manually. Find your browser's history, select the option "remove" and check "cookies**".**
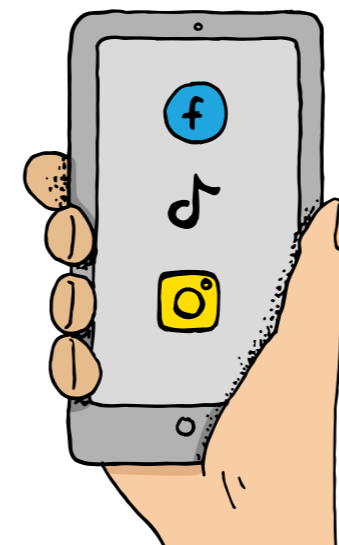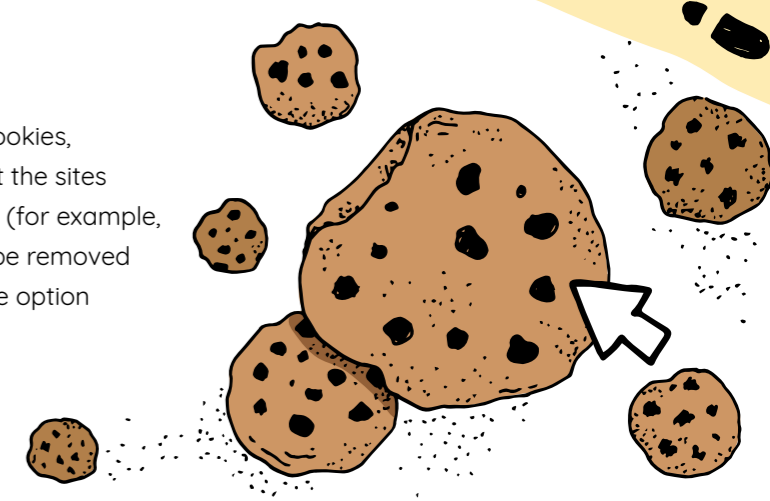
Do you have an account on Facebook? Instagram? TikTok? Snapchat? Or maybe you tweet? (Hey, remember, you should be at least 13 years old!) Each of these apps lets you decide about your privacy. It takes a loooooong time to get through the instructions for these settings, so find an adult who knows a lot about the internet. But remember! Choosing even the most private settings doesn't protect you completely. A photo you upload online can circulate out of your control. And the apps will still analyse what you do and look at when using them, and they can sell this information to advertisers.

Meet someone who's CREATING the internet in their own way!

POTION:

THE POWER OF THREE ISLANDS

• Drink when you need support. You'll get back on the right path again!

JOANNA SAYS: I'M CHECKING IT OUT!

text: Anna Błaszkiewicz, illustrations: Alicja Wasilka-Krygier

She's a security expert, but she doesn't work for the police or a security company. She's an IT specialist. Once, she used to break into computer systems and showed people where the holes were that someone could sneak in through. Now, Joanna Rutkowska from Poland thinks it's much better to create systems that nobody can fool.

She loved maths right from first grade. It was simple and logical to her, and it taught her critical thinking. As Joanna says: "Mathematics is special. **You don't have to believe what the teacher tells you or what's written in the textbook.** You can check it – all you need is your head, a piece of paper and a pencil. Nothing more." .

When she was 11 years old, the first computer arrived in her home. It took up the whole desk and had a black-and-white monitor. It fascinated her. She tried to figure out how it worked. Unfortunately, she couldn't play any games on it. So, she started learning how to write programs, all by herself, from books for adults. Although, back then, she didn't think about the fact they were for adults at all. Joanna says: "I read them and made plans for what I would write as soon as I could get to the computer, because my parents said I couldn't use it every day." It was her whole world.

▶▶▶

If you look up Joanna online, you'll **soon see the word "hacker".** That's what we call a person who attacks computer systems. Sometimes they do it to warn others and say "Hey, pay attention, this isn't safe. Something has to be fixed!" Sometimes they do it to steal secret data, release a nasty virus, or cause chaos. What are these systems? Thanks to them, you can shop online, use your bank's website to see how much money you have, or safely drive across town as a system controls the traffic lights.

And Joanna? What does she have to do with it? At a conference for security experts, she showed how you can attack a very popular computer system. Later, for a few years, she and her team looked for errors and holes in other computer systems and technologies.

But she doesn't like the word "hacker" and never thought of herself like that. She also doesn't want to encourage you to do work like hers. She says: "I think it's much cooler to be an engineer, who builds a sturdy and beautiful bridge, than to walk over a bridge built by someone else and try to figure out what screw to pull out to bring it down. That's what computer security experts often have to do: think about how to break something someone else created."

Truth

Love

Beauty

These days, Joanna herself deals more with building bridges than pulling out screws – not literally, of course. She's a computer systems architect, which means she designs them. What does her work look like? She collects information, for example by reading articles about new technologies. Then she has to absorb all that knowledge and sort it out in her head. Luckily, **she can do that even while taking a stroll.** Then she creates something – a document, an article, or some code. That's a piece of her bridge.

Joanna admits that computer science is very absorbing. It allows her to quickly create new things. This is what she has to say about it: "I write a piece of a program, start it up, and it works. But then I think that I could add something more, so I quickly add a few lines. And that's great. I'll add one more thing. Oh no, now it doesn't work! How strange! I have to check it. Three hours later, it's finally working again! Maybe I can add something else? **You can keep going on and on like this. It's addictive!** And dangerous – it can suck us in, and then it's easy to miss out on the pleasures of everyday life."

Joanna wants to tell you something else: **"I have three goals in my life. They're like three islands I sail between. One of them is TRUTH, or science. The second is BEAUTY – a flower can be beautiful, but a computer program can be too. The third is LOVE – building good relationships with other people, based on understanding and trust. It's not worth sailing too far towards one of the islands, like TRUTH, for example, because you can then lose sight of the other two. And they're all equally important."**
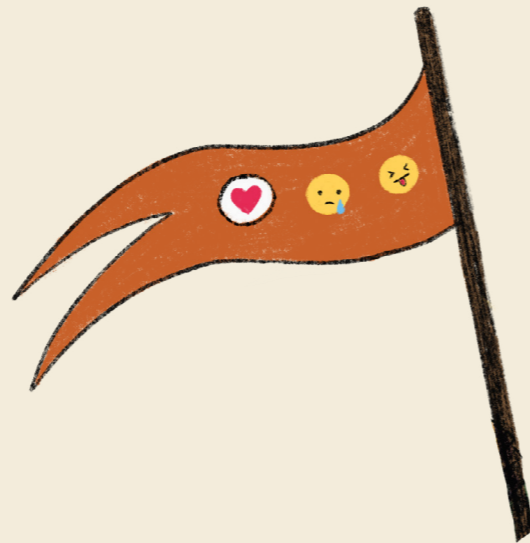
CREATING NEW WORLDS

• read Kasia's story and find out how to create cool and beautiful things on the internet.

I DESIGN GAMES!

When she was a young girl, she loved to draw
and play on the computer. Today, she's a computer
game designer. You can recognise her by the fantastic
tattoos on her arms and her happy, bright gaze.
Kasia Redesiuk says: "I've never grown out of being a girl."

ANYTHING IS POSSIBLE IN COMPUTER GAMES

– let's travel through time. To school, where little Kasia Redesiuk is learning. Her school notebooks are filled with doodles. Her teachers tell her: too many drawings in your notebooks! But she loves to draw, especially animals. They're her favourite subject to this day. She draws her own animals, too – she has three cats and three aquariums, and the aquariums hold fish (colourful Siamese fighting fish) and prawns.

AS A CHILD, KASIA LOVES COMPUTER GAMES.

First, she peeks at her dad playing. Then she starts playing herself. One of her favourite games is about the Lion King: playing as Simba from the famous film. When she's seven years old, she has no problem putting the game away to go outside. But when she's around 13, she really gets into gaming. This is because she starts playing online with other people – it's not just about the game, but also about the meetings. Her parents have to remind her sometimes to do her homework!

SHE DOES VERY WELL IN SCHOOL.

It's easy for her. And because she's a star pupil, she thinks she should do serious things. Maybe she should be a doctor? Or a lawyer? At one point, she thinks, "Oh, architects do some drawing." She goes to university to study architecture, but she's not happy. She draws a little bit, but not animals. She has no time for games. She decides to drop out of university. Finally, she ends up in the video game industry, where she finds a combination of her two favourite things in the world.

HOW IS A GAME MADE?

At the beginning, there's always an idea: "Hey, let's make a game." OK, but what will it be about? Let's say elephants. Are they pink or green? These things are made up by concept artists. They are given a theme, some guidelines, and then they draw what the game could look like. A concept artist must have a lot of ideas. That's why they practice fast drawing – to be able to create ten different proposals in a day. If the elephant has a hat, it has to be designed.

KASIA DREW THIS SIX-LEGGED FURRY OWL.

THERE ARE ABOUT A HUNDRED PEOPLE WORKING ON THE GAME KASIA IS MAKING WITH HER TEAM.
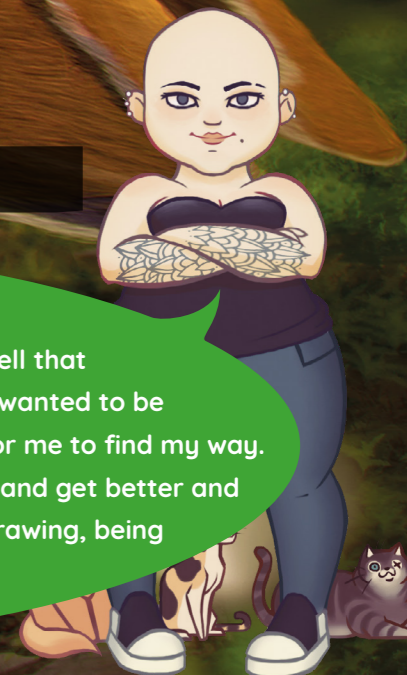
Not all of them are artists. There are also animators, who help the characters move, modellers, who sculpt them to look three-dimensional, programmers, who ensure the game works on a computer, and many others. You can compare it to building a rocket ship that's going into space. Everything has to be designed: from the engine to the smallest bolt. Kasia started out drawing this rocket ship, then she became the art director, and now she watches over the whole rocket ship.

WHEN KASIA IS 13, SHE LOVES READING ANDRZEJ SAPKOWSKI'S *THE WITCHER.*

The main character is Geralt, a monster hunter. Many years later, Kasia, together with the CD PROJEKT RED team, will design the Witcher computer game, which people all over the world play today. Kasia explains it like this: "A long time ago, I didn't even know there was a job like that, designing video games. I thought I would have to grow up some day, that there are things that end when your childhood ends. It wasn't until later that I realised that's not true. We can bring the things we like as children into adulthood."

KASIA HAS TO GO BACK TO HER ROCKET SHIP, BUT SHE WANTS TO TELL YOU ONE MORE THING:

The most important thing in life is doing something that makes you happy. If you're happy riding a skateboard, learn to do it so well that someone pays you for it. You can take your time making up your mind. I wanted to be a geologist, archaeologist, architect, and motorcycle rider... It took a long time for me to find my way. But it's worth taking your time. Of course, first you have to find that one thing and get better and better at it. Devote a lot of time to it. That goes for everything – films, drawing, being a doctor, or taking care of animals. Do what you love.

Create your own set of online rules!

This is the end of the journey!
You've collected new skills
and collected all your gear.
Here is a **mini quiz** that
will help you figure out
the best rules for yourself!

THINK HOW YOU WOULD ACT IN THESE SITUATIONS. If you have any doubts, ask an adult for help. Write the answers next to the questions; maybe they'll form a set of helpful rules.

1. Someone in your class has shared a video of themselves dancing the new choreography of their dance group. What should you remember when writing a comment?

2. Someone wrote some mean things in a comment on your friend's video on YouTube. How do you cheer her up?

3. You want to put a photo of yourself and your brother making a cake on your blog. What do you do to make sure your brother is OK with this?

4. Your friends are trying to convince you to send them a silly or embarrassing picture. What do you say?

5. A stranger has sent you a message asking for your address and phone number. What do you do?

6. You want to send someone a photo of your baby sister, who was born a week ago. What do you do to prevent strangers from seeing it?

7. You want to log into your email account on a library computer, but your friends are looking over your shoulder. What do you do to prevent anyone from seeing your password?

8. You want to make a video for YouTube where you'll talk about your day. What will you say, and what will you leave out?

MY RULES
How I want to use the internet:

Your notes

Hi! *A Smart Kid's Guide to the Online World of Wonders* was originally created in Poland. It was written by Kosmos dla Dziewczynek – Cosmos for Girls Foundation – which works to ensure equal opportunities for boys and girls. To achieve this goal, the foundation has created a unique, smart, beautiful and bold magazine for children aged 7-13 – *Kosmos dla dziewczynek*. In this magazine, we deal with important subjects that apply to you, your friends and acquaintances from your neighbourhood. See what the cosmos looks like: **www.kosmosdladziewczynek.pl**. Good news – our magazine is also published in French and German!

Overall concept: Sylwia Szwed, graphic design and layout: Barbara Piotrowska

Want to keep up to date with EU news about digital technologies?
Go to our website **https://digital-strategy.ec.europa.eu/en** and follow our social media **@DigitalEU** to learn more about topics like cybersecurity, disinformation, media literacy, digital skills, or initiatives you could join, like the Code Week, Safer Internet Day and many more.

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