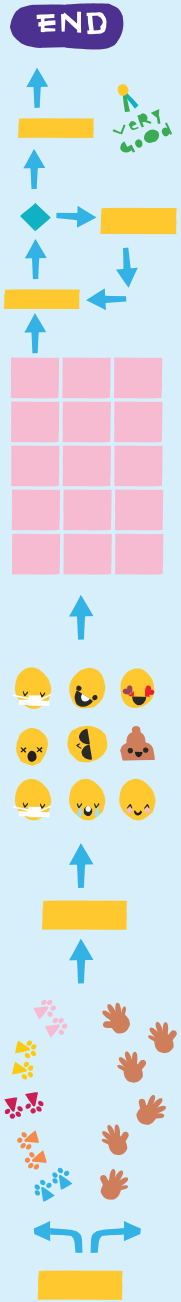
PHONE

ASPHALT CODE



EC PP 1-6

This activity supports the development of students' algorithmic thinking and problem-solving skills through group work, encouraging them to tell stories and use their imagination to enhance learning.

Asphalt code

The group is divided into seven small groups. First, each group chooses a section of the grid and creates a movement code using actions like ”step right,” ”jump forward,” or ”walk backward.” Practice performing your code within the grid.

Next, groups teach their code to others and demonstrate how it works. Once all groups have shared, the whole class completes the full track together, performing each section in order.

Tip: *Choose a comfortable spot in the playground to tell a story related to your asphalt code.*

Digital Competency Path Objectives:

- I can give simple instructions to a classmate or robot and follow the instructions given by others **(Grades 1-2).**
- I can use loops in a graphical programming environment **(Grade 4).**
- I can break problems into smaller parts, give step-by-step instructions, and follow them **(Grade 4).**
- I can give step-by-step instructions to a robot **(Grade 5).**

Curriculum connections:

- **Early Childhood Education:** Various forms of expression, Mathematical thinking, ICT skills
- **Pre-primary:** Thinking and learning to learn, Mathematics, Communication and expression, ICT readiness
- **Grades 1-2:** Students learn basic arithmetic and express ideas clearly (Mathematics, Mother Tongue and Literature).
- **Grades 3-6:** Students apply mathematical skills and develop their linguistic expression (Mathematics, Mother Tongue and Literature).

EC PP 1-9

This activity enhances students' expression skills, independent planning of presentations, and understanding of digital forms of opinion expression, such as likes and comments.

Phone

Design your own dance performance, advertisement, or other phone-related presentation and perform it for others. Think about how phones are used for fun, communication, or advertising. After the performance, discuss together: What kind of media makes you happy? What was the purpose of your performance? What kind of messages do we see on our phones every day?

Tip: *What are different ways to express opinions online, such as sharing, liking, thumbs up, or commenting?*

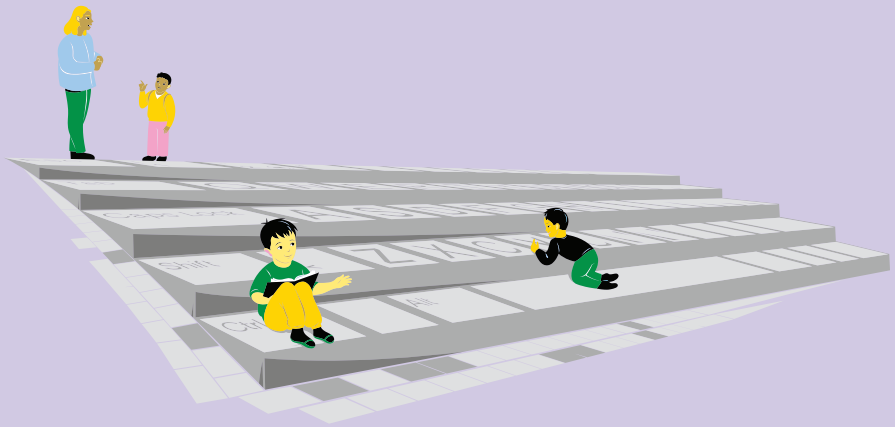
Digital Competency Path Objectives:

- I can recognize which media content brings me joy **(Grade 2).**
- I know that media content serves different purposes, such as entertainment, advertising, or sharing information **(Grade 4).**
- I understand that the media content I consume influences my opinions **(Grade 6).**
- I understand the difference between commercial, public, and social media **(Grade 7).**

Curriculum Connections:

- **Early Childhood Education:** Various forms of expression, Interaction and emotional development, ICT skills
- **Pre-primary Education**: Thinking and learning to learn, Communication and expression, ICT readiness
- **Grades 1-2:** Students practice expressing their ideas and improving interaction skills (Mother Tongue and Literature).
- **Grades 3-6:** Students deepen their expression skills and analyze messages from different perspectives (Mother Tongue and Literature).
- **Grades 7-9:** Students develop critical media literacy and apply technological skills in various contexts (Mother Tongue and Literature, ICT).

KEYBOARD



SCREEN

EC PP 1-6

This activity supports students in planning and presenting their ideas, understanding the role of media, and giving and receiving constructive feedback. It also enhances communication, collaboration, and technological skills through playful learning.

Screen

Students design their own video show. Discuss what types of videos are available on the internet (e.g., skits, daily vlogs, unboxing videos, challenge videos). Students can use props such as stuffed animals for their presentations. Perform the live videos for each other. Viewers can encourage the performers by giving thumbs up or forming a heart shape with their hands. Afterward, share positive comments.

Tip:
Introduce "special effects" by using lights, music, or natural materials as props.

Tip:
Create an online store display on the screen. What would the store sell? How would it be advertised?

Digital Competency Path Objectives:

- I experiment with different devices and programs or apps to produce media **(Grade 3).**
- I can distinguish between factual and fictional content **(Grade 2).**
- I recognize unreliable websites **(Grade 4).**
- I understand that personal data is collected when I use the internet and apps **(Grade 6)**

Curriculum Connections:

- **Early Childhood Education:** Various forms of expression, Development of emotional skills
- **Pre-primary:** Communication and expression, Technological readiness
- **Grades 1-2:** Students develop their communication and interaction skills and practice expressing ideas (Mother Tongue and Literature).
- **Grades 3-6:** Students analyze texts in greater depth and improve their linguistic expression (Mother Tongue and Literature).
- **Grades 7-9:** Students combine critical literacy with technological skills in diverse contexts (Mother Tongue and Literature, ICT)

EC PP 1-6

This activity supports students in recognizing letters, forming words, and understanding language structures while enhancing motor skills and ICT readiness, such as understanding basic commands like copy, cut, and paste.

Tip:
Try implementing commands such as capital letters, spaces, copy, cut, and paste with partners. You can also create secret messages using the keyboard!

Keyboard

Ask students to select a letter, for example, from the letters in their own names, and stand on its corresponding spot. If necessary, assign multiple letters to some students. The teacher or a student reads a word or sentence one letter at a time. When a student hears their letter, they sit on the letter spot quickly and then stand back up. Pay attention to spaces, capital letters, etc.

Follow along together and see what word or sentence appears!

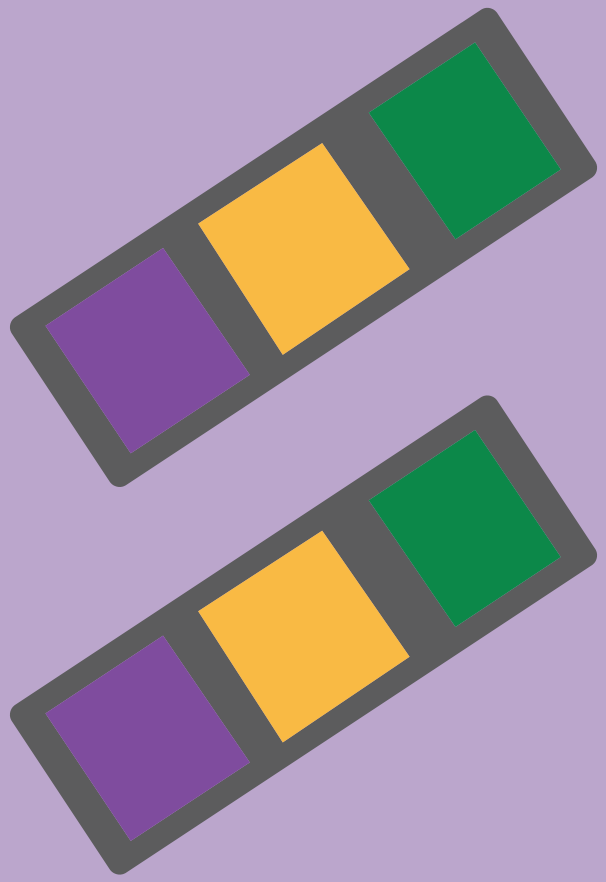
Digital Competency Path Objectives:

- I can write text using a word processor (e.g., Word or Docs) **(Grade 2).**
- I know various keyboard commands (e.g., copy, cut, paste) **(Grade 3).**

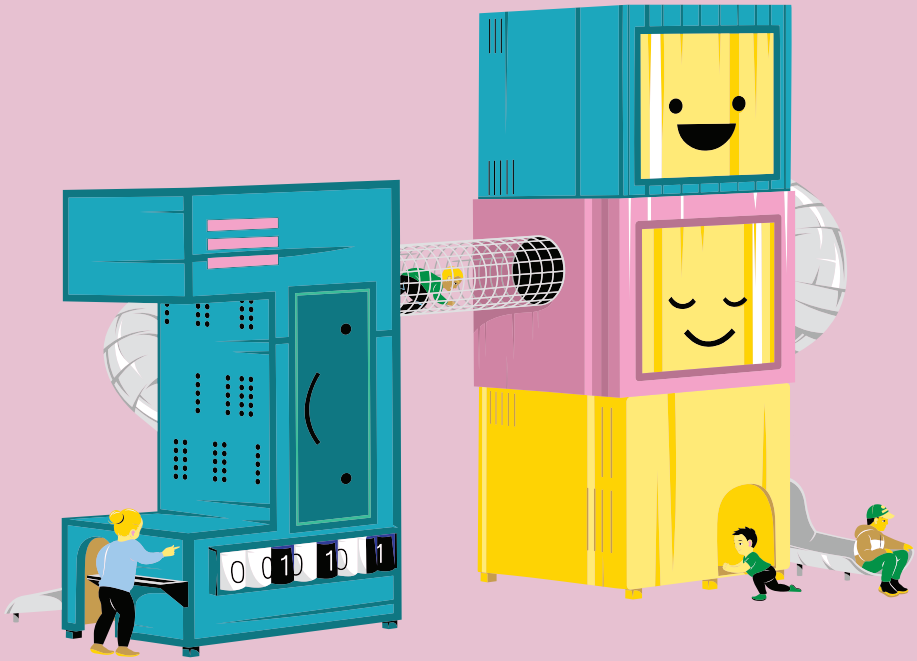
Curriculum Connections:

- **Early Childhood Education:** Language and communication, Motor skills
- **Pre-primary:** Mother Tongue and Literature, Interaction and collaboration
- **Grades 1-6:** Students practice expressing ideas and storytelling (Mother Tongue and Literature).

PROGRAMMERY SAYS



COMPUTER TOWER



1-6

This activity supports students' understanding of the concepts of input and output, introduces them to basic technological processes, and encourages the use of imagination to visualize how technology works.

Computer Tower

Input and Output: Students act as the input and output of a computer. When entering the computer, they represent the input, and when exiting through the slide, they become the output. Before climbing the computer tower, discuss the types of programs found in computers. Each student selects a program, such as a favorite game, TV show, or video call app.

The facilitator "starts" the computer, and students move inside the tower, simulating their chosen program.

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Tip: *Add an update to the game — the instructor can shout "update in progress," and everyone must move slower or faster.*

Digital Competency Path Objectives:

- I can log in and out of computers, programs, and apps **(Grade 1).**
- I can turn on and off computers and tablets **(Grade 1).**
- I have used different programs or apps at school **(Grade 2).**
- I actively try different devices and programs or apps for media production **(Grade 3).**

Curriculum Connections:

- **Early Childhood Education:** Environmental exploration and technological thinking
- **Pre-Primary:** Mathematical and logical thinking, ICT readiness
- **Grades 1-2:** Students learn to observe and understand basic environmental structures (Environmental Studies).
- **Grades 3-6:** Students deepen their understanding of environmental phenomena and interconnections (Environmental Studies).

EC PP 1-6

This activity enhances students' algorithmic thinking, understanding of conditions and loops, and motor and teamwork skills in a playful and physical setting.

Programmer Says

Students stand in line near the trampolines. The teacher gives a command that the first three students perform. After completing the task, participants move forward, allowing a new student to join the first trampoline. The teacher varies the commands, such as:

Round 1 (simple commands): Jump three times.

Round 2 (loops): The teacher indicates the number of repetitions with hand signals.

Round 3 (conditions): The teacher sets conditions—students with a specific letter in their name or a certain clothing color can jump while others wait.

Subsequent rounds: Students create their own commands.

Digital Competency Path Objectives:

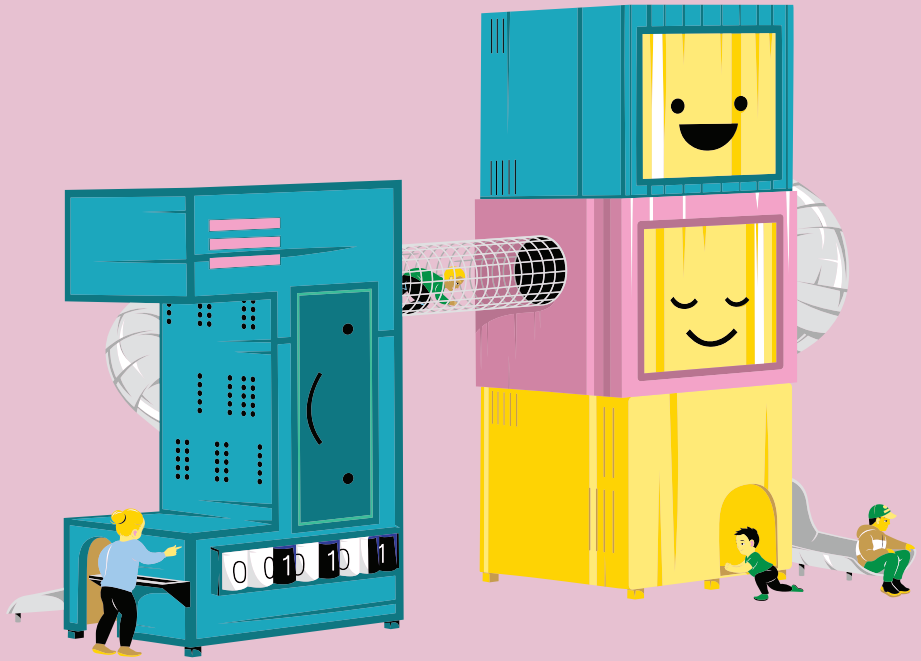
- I can give simple instructions to a classmate or robot and follow instructions given by others **(Grades 1-2).**
- I can use loops in a graphical programming environment (**Grade 4).**
- I can break problems into smaller parts and provide step-by-step instructions to a classmate or robot **(Grade 4).**
- I can give step-by-step instructions to a robot (**Grade 5).**

Curriculum Connections:

- **Early Childhood Education:** Motor skills, Play and interaction
- **Pre-Primary:** Mathematics, Physical Education
- **Grades 1-2**: Students learn basic arithmetic and motor skills through physical activities (Mathematics, Physical Education).
- **Grades 3-6:** Students deepen their mathematical skills and develop physical coordination (Mathematics, Physical Education).

INTERNET CAT

VIRUS TAG



1-6

This activity develops teamwork and collaboration skills, introduces students to key cybersecurity concepts such as viruses and antivirus measures, and enhances physical coordination and rule-following through active play.

Virus Tag

Some students play viruses, while others play antivirus programs. The goal of the antivirus players is to ”catch” the viruses and take them to the ”trash bin,” a pre-determined area. A second virus can ”rescue” a caught virus from the bin. Viruses must stay within the computer’s boundaries.

Extra challenge: Invent different types of viruses to make the game more challenging. Antivirus players can get one software update per round — for example, a verbal command — to temporarily freeze a virus. Viruses might have special abilities, like self-healing malware that requires two tags to stop. Can you come up with game versions of a rootkit, trojan, or ransomware attack? How would they work in tag?

Tip: *Designing your own version of the game is a good opportunity to practice commands, loops, and conditions.*

Curriculum Connections:

- **Early Childhood Education**: Play and physical activity
- **Pre-Primary:** Mathematics and basic technology, Interaction
- **Grades 1-2:** Students practice basic motor skills and diverse physical activities (Physical Education).
- **Grades 3-6:** Students deepen their understanding of environmental phenomena and develop physical skills in different environments (Environmental Studies, Physical Education).

EC PP 1-2

This activity supports students’ linguistic skills and listening comprehension through the game of telephone. It also introduces them to digital culture phenomena, such as memes, and encourages the use of humor in communication.

Tip: *What kinds of memes have you seen?*

Internet Cat

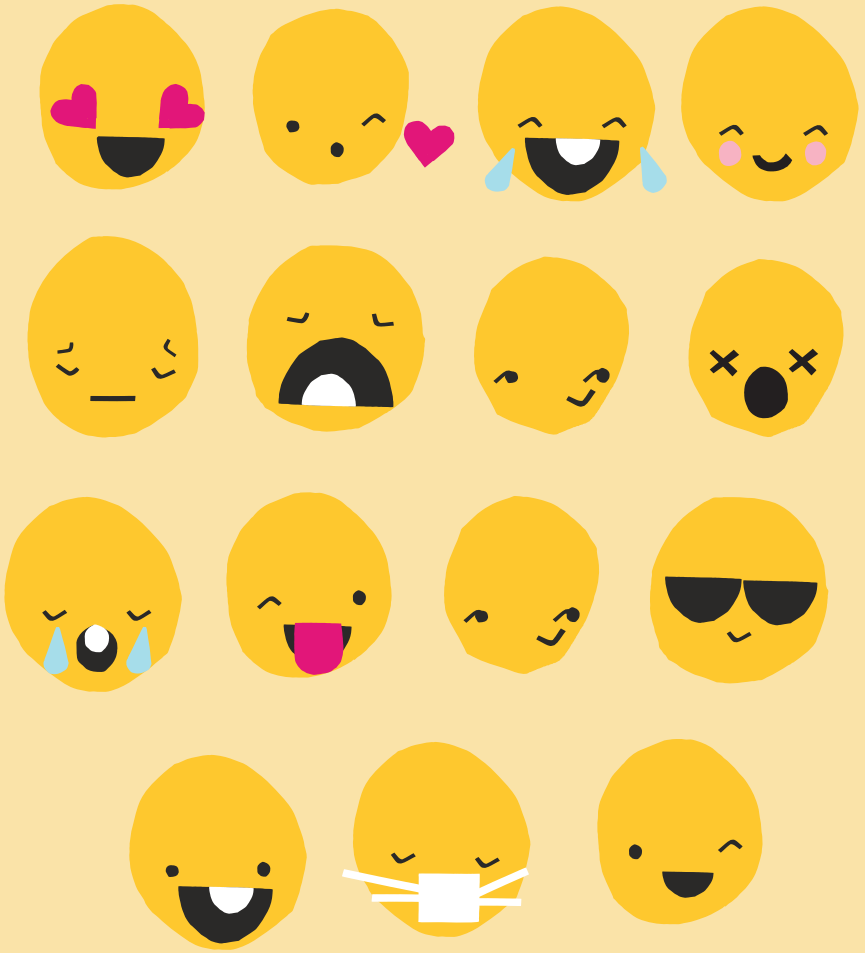
Many people share memes, which are funny or clever videos and images, because they are often humorous and insightful. Anyone can create a meme, and they frequently change.

Play a game of ”telephone,” where one student whispers a phrase to the next person in the circle. The message travels around the circle until the last player, sitting on the ”cat,” repeats what they heard aloud.

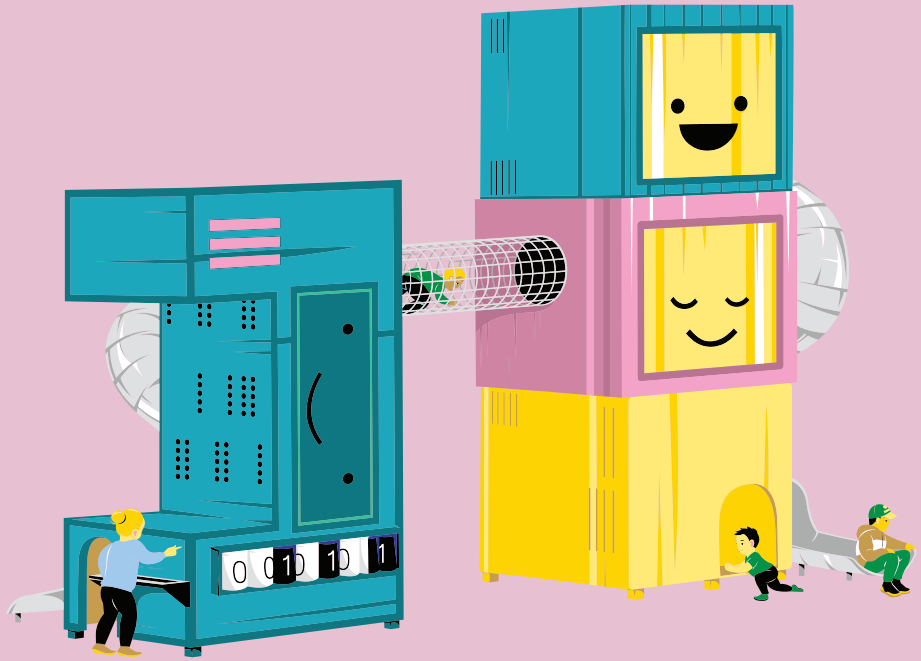
Curriculum Connections:

- **Early Childhood Education:** Language expression and listening skills
- **Pre-primary:** Mother Tongue and Literature, Cultural competence
- **Grades 1-2:** Students practice their interaction skills and learn to express themselves in different ways (Mother Tongue and Literature).

EMOJI



REMOTE CONTROL ROBOT



EC PP 1-3

This activity enhances students' ability to give and follow simple instructions, understand step-by-step instructions and loops, and develop problem-solving and teamwork skills. It also builds foundational algorithmic thinking.

Remote Control Robot

Gather near the computer tower. One student acts as a robot, and another as a remote control. Set the rules for movement and jumping. The remote control guides the robot along the visible motherboard paths and components (lines and dots).

Digital Competency Path Objectives:

- I can give simple instructions to a classmate or robot and follow instructions given by others **(Grades 1-2).**
- I can use loops in a graphical programming environment **(Grade 4).**
- I can break problems into smaller parts and give step-by-step instructions to a classmate or robot **(Grade 4).**
- I can give step-by-step instructions to a robot **(Grade 5).**

Curriculum Connections:

- **Early Childhood Education:** Interaction and collaboration, Motor skills
- **Pre-primary:** Mathematical and logical thinking, Communication and expression
- **Grades 1-2:** Students develop collaboration skills and practice expressing ideas (Mother Tongue and Literature).
- **Grades 3-6:** Students apply mathematical skills and strengthen their collaborative abilities (Mathematics).

EC PP 1-6

This activity supports students' ability to recognize emotions, use symbols, and develop expression and verbalization skills.

Emoji

One student stands in the playground's phone-shaped play area, while the others sit on the keyboard steps. The student selects an emoji from the task card and acts it out silently (pantomime). The other students try to guess or describe the emoji being presented.

Curriculum Connestions:

- **Early Childhood Education:** Various forms of expression, Emotional and interaction skills
- **Pre-primary:** Interaction and expression
- **Grades 1-2:** Students develop expression skills and practice clear interaction (Mother Tongue and Literature).
- **Grades 3-6:** Students deepen their linguistic expression and strengthen their ability to collaborate in groups (Mother Tongue and Literature).

BATTERY TAG

MOUSE

EC PP

This activity supports students in understanding computer controllers and their functions while promoting interaction with peers through active play. It develops foundational digital interface knowledge.

Mouse

Gather around the mouse-shaped play structure and discuss different ways to control a computer (e.g., mouse, touchpad, arrow keys, pen, touchscreen, voice).

Students take turns riding the mouse or other spring rockers while the facilitator ”controls” them by playing music. The student swings until the facilitator pauses the music, representing the end of a computer input.

Digital Competency Path Objectives:

- I can use a touchpad, touchscreen, and mouse. **(Grades 1-2).**

Curriculum Connections:

- **Early Childhood Education:** Introduction to basic technology, Interaction and physical activity
- **Pre-primary:** ICT readiness, Motor skills

PP 1-6

This activity supports students’ understanding of the concept of charging through play. It also enhances their collaboration, attention, and motor skills.

Battery Tag

The battery is an essential component of many digital devices and is usually hidden inside the device. It needs regular charging to keep the device running.

Students gather around the phone play structure. The ”it” player acts as a program that ”drains” the others’ batteries by tagging them. Tagged players freeze and count down from 10. Other students can ”recharge” them by forming a chain between the frozen player and the phone while making a wave motion with their hands. If the frozen player is not recharged before reaching zero, they also become ”it.”

Curriculum Connections:

- **Pre-primary:** Collaborative learning, Motor skills
- **Grades 1-2:** Students learn to collaborate and practice interaction skills through physical activities (Physical Education).
- **Grades 3-6:** Students enhance their observational skills and develop physical abilities in group activities (Environmental Studies, Physical Education).

ROBOT

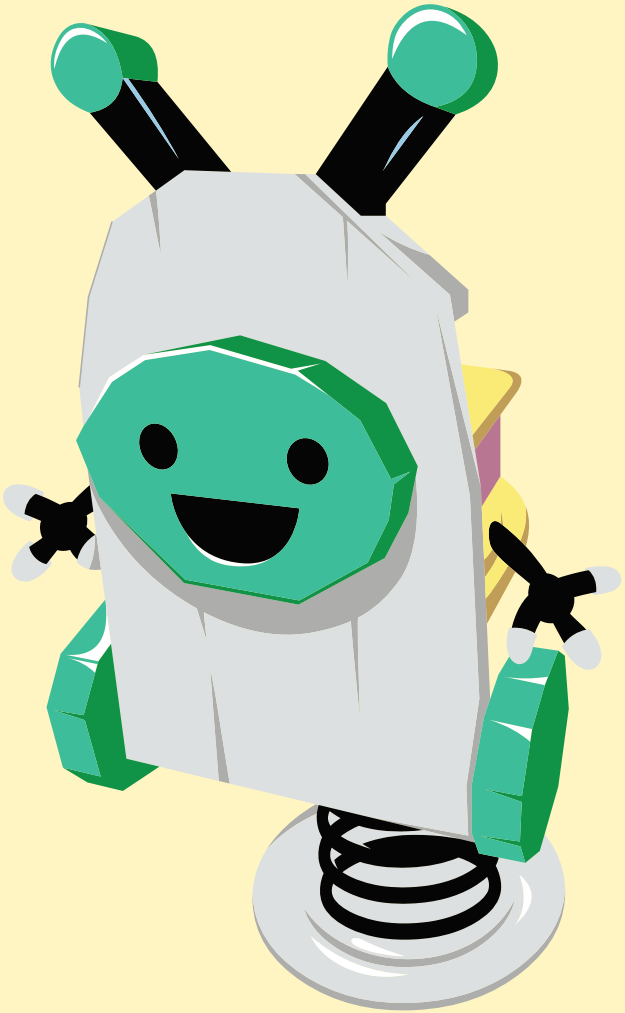


PHOTO SCAVENGER HUNT

EC PP 1-6

This activity supports students' observational skills, linguistic expression, and photography abilities. It also enhances their ability to identify and understand elements in their environment and use ICT tools for documentation.

Photo Scavenger Hunt

Borrow laminated photos from the playground instructor. The pictures show details of the playground that students need to find. Some photos are easy, while others are more challenging.

Early Childhood Education and Pre-primary:

Students search for the location shown in the picture and bring the card back. They can also use a shared iPad for photo-taking.

Primary School (Grades 1-6):

Students take photos that match the cards using a phone or tablet. They return the cards to the instructor/teacher and show the captured image.

Digital Competency Path Objectives:

- I can compare objects based on size or shape. **(Grade 1)**
- I can send messages, audio messages, photos, or videos using a school device. **(Grade 3 and 4)**
- I can combine images, text, and sound in my creations. **(Grade 5 and 6)**

Curriculum Connections:

- **Early Childhood Education:** Observing the environment and various forms of expression
- **Pre-primary:** Recognizing images and photography skills, Interaction
- **Grades 1-2:** Students learn to observe and understand environmental phenomena while developing their ability to collaborate in groups (Environmental Studies).

EC PP

This activity enhances students' understanding of robots and their functions, introduces key concepts like sensors, and encourages imaginative and technology-focused thinking.

Robot

Gather around the robot play area and discuss different types of robots.

What robots have you seen?

What type of robot would you like to invent?

Explore how robots sense the world by relating them to human senses. For example:

Video camera: Vision

Pressure sensor: Touch

Humidity sensor: Moisture detection

Microphone: Hearing

Speaker: Voice output

Curriculum Connections:

- **Early Childhood Education:** Observing the environment and technology, Imagination and creative thinking
- **Pre-primary:** Basic technological concepts, Interaction and collaboration

OVERHEATED PIXELS

SANDBOX

EC PP

This activity supports logical thinking, creativity, and an understanding of order. It also fosters cooperation and visual organization.

Sandbox

Sorting Algorithm

Can you sort sandbox toys, leaves, or other objects from the yard from largest to smallest? Can you build three cakes of different sizes? What about stacking them on top of each other?

Creating Patterns

Use sticks, stones, or leaves to create repeating patterns (for example: stone – leaf – stone – leaf). Can you guess what rule is guiding the pattern?

Curriculum Connections:

- **Early Childhood Education:** Creativity, Conceptual and motor development
- **Pre-primary:** Logical thinking and organizing, Collaboration skills

EC PP 1-6

This activity supports students' coordination, focus, and rule-following in a group setting. It also promotes teamwork and playful interaction.

Overheated Pixels

Yellow pixels represent lava! Only gray pixels are safe to step on. Navigate the path without stepping on yellow pixels.

Divide the students into two teams: gray and yellow. Each team can only move on their assigned pixels. The goal is to complete the course as quickly as possible.

Curriculum Connections:

- **Early Childhood Education:** Motor skills, Physical activity and play
- **Pre-primary:** Collaboration skills, Motor development
- **Grades 1-2:** Students practice motor and coordination skills through physical play (Physical Education).
- **Grades 3-6:** Students deepen their physical skills and understanding of environmental phenomena (Physical Education, Environmental Studies).

PIXEL ARTWORK

PIXEL GAME

EC PP 1-6

This activity supports students' ability to follow instructions, change roles, and interact with peers in a playful environment. It also improves reaction time and teamwork.

Tip:
This activity can also be done near the motherboard or the semi-circular structures by the computer tower.

Pixel Game

Gather near the pixel-shaped seats next to the keyboard play area.

Divide players into color groups: yellow, purple, and gray. There should be one more player than there are available pixel seats. Mark the extra seats with leaves or stones as "off-limits."

Players sit on the pixel seats, and the leader shouts a color, such as "Yellow!" Players with that color must quickly switch seats. The leader tries to take one of the empty seats. The leader may also call out "Update resolution!" where everyone switches seats. The player left without a seat becomes the new leader.

Curriculum Connections:

- **Early Childhood Education:** Collaboration and physical activity, Attention and interaction
- **Pre-primary:** Motor development, Collaboration and rule-following
- **Grades 1-2:** Students develop motor and collaboration skills through physical tasks (Physical Education).
- **Grades 3-6:** Students deepen their physical abilities and understanding of environmental phenomena (Physical Education, Environmental Studies).

EC PP 1-2

This activity enhances students' creativity and ability to organize and arrange visual elements. It also teaches the use of digital tools like cameras and supports the development of expression skills.

Pixel Artwork

You'll need a phone or tablet for taking photos, scissors, paper, and glue.

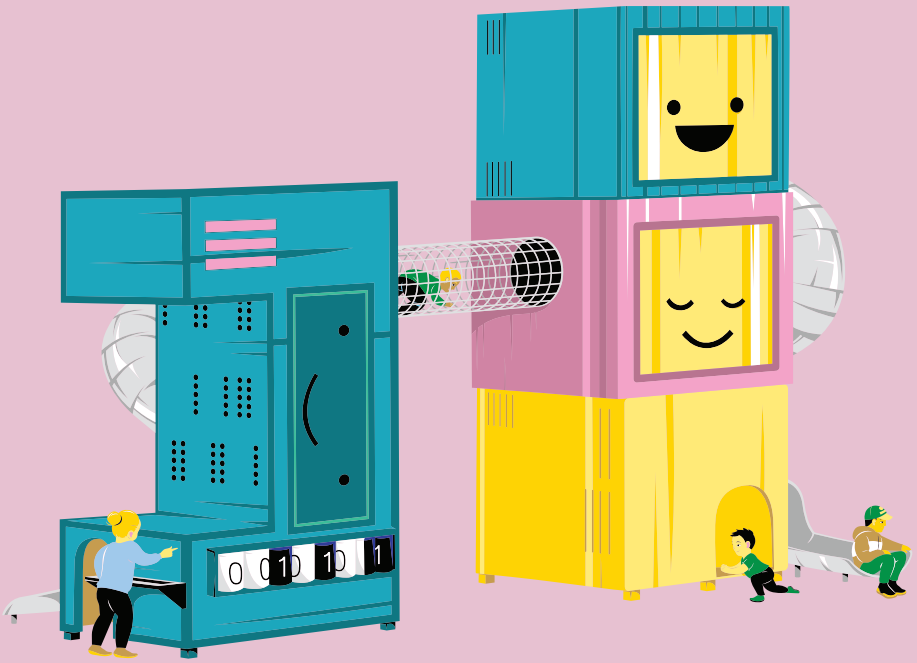
Create pixel art by cutting out small, equally-sized squares from magazines or leaves (adults can help younger students). Students can arrange the squares into their own designs, such as a heart, rabbit, smiley face, tree, or letters. A phone can be used to search for inspiration.

Take a picture of the final artwork.

Curriculum Connections:

- **Early Childhood Education:** Various forms of expression, Motor skills
- **Pre-primary**: Visual expression, Technology skills
- **Grades 1-2:** Students explore visual expression and creativity through different art activities (Visual Arts).

COMPUTERS IN THE CITY



MAP ACTIVITY

1-6

This activity supports cross-disciplinary learning and collaboration, using the environment as an active learning space.

Map Activity

Print map sheets or borrow laminated maps from the playground.

Divide students into pairs or small groups, assigning each pair/group a task from the list below. Assign different tasks to ensure groups explore different areas. After completing a task, students return to the teacher to report their findings and receive a new task. At the end, students can compare and discuss their results.

- Find the game controller. How many buttons does it have?
- Count the pixel chairs and report them as fractions (e.g., number of yellow, gray, and purple pixels).
- Find the asphalt code and design a quick game with three rules using human game pieces.
- How many holes can you count on the computer tower, and what colors can you find inside it?
- Use the binary abacus near the computer tower to represent the number 7 in binary (use a phone if needed).
- Identify five different shapes or patterns (e.g., circles, squares, triangles, stripes).
- Which playground equipment:
- Makes you think?
- Helps you relax?
- Makes you laugh?
- Changes with the seasons?
- Casts interesting shadows?

Curriculum Connections:

- **Grades 1-2:** Students explore environmental phenomena and learn to make observations and explanations (Environmental Studies).
- **Grades 3-6:** Students understand interactions in nature and develop problem-solving skills using mathematical concepts (Environmental Studies, Mathematics).

7-9

This activity supports students' observation skills, technological understanding, and critical thinking. It also fosters the ability to apply knowledge in real-world contexts.

Computers in the City

How do computers impact urban planning? List different types of computers or technology you can spot around the playground and its surroundings. Look for examples of computers used in urban infrastructure, such as traffic lights, parking systems, public transport displays, city bikes, trash monitoring systems, surveillance cameras, elevators, escalators, and lighting systems.

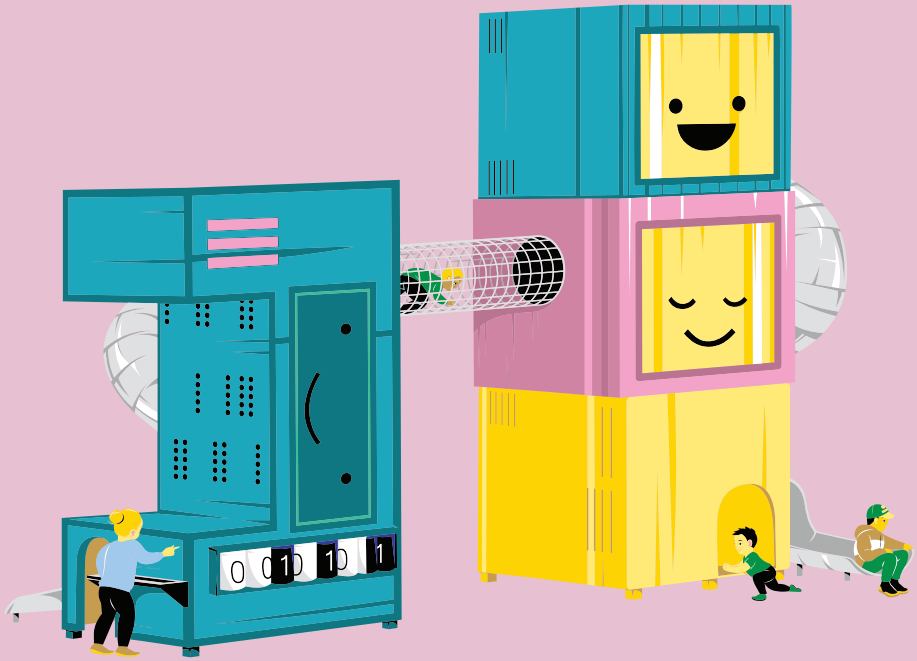
Record your observations and discuss how technology is used to improve everyday life in the city. As a follow-up, brainstorm new technological solutions that students would add to city planning.

Curriculum Connections:

- **Grades 7-9:** Students develop an understanding of environmental phenomena, strengthen their linguistic expression, and broaden their thinking (Biology and Geography, Mother Tongue and Literature).

ALGORITHM DANCE

BINARY CALCULATOR



7-9

This activity supports students' understanding of the binary system, logical reasoning, and numeracy. It also promotes technological proficiency through the use of digital tools for calculations.

Binary Calculator

Find the green computer tower and the binary abacus nearby. What decimal number does the binary sequence below represent? Can you create your birthdate using the abacus or add numbers together? Use a phone as needed..

0101110100000111

Binary is a number system that uses only two digits: 0 and 1.

When you want to convert a binary number to a decimal number, follow these steps:

Write down the binary number.

Example: 0101110100000111

Assign a place value to each bit, starting from the right.

The place values are powers of 2:

The rightmost bit: $2^0 = 1$

The second bit from the right: $2^1 = 2$

The third bit: $2^2 = 4$

The fourth bit: $2^3 = 8$

And so on.

Go through the binary number and add together only the values where the bit is 1.

For example, in 0101110100000111:

$2^0 = 1$

$2^1 = 2$

$2^2 = 4$

$2^3 = 8$

$2^7 = 128$

$2^9 = 512$

$2^{10} = 1024$

$2^{12} = 4096$

Add together all these values:

4096 + 1024 + 512 + 128 + 8 + 4 + 2 + 1 = 23,431

Converting a decimal number to a binary number:

If you want to convert a decimal number to binary, follow these steps:

Start with the decimal number.

Example: 23

Find the largest power of 2 that fits into the number.

The largest 2's power ≤ 23 is 16 (2^4).

Subtract that value from the number.

23 - 16 = 7

Repeat the process for the remaining value:

Largest ≤ 7 is 4 (2^2) → 7 - 4 = 3

Largest ≤ 3 is 2 (2^1) → 3 - 2 = 1

Largest ≤ 1 is 1 (2^0) → 1 - 1 = 0

Write down the binary number, starting from the largest power of 2:

16 (2^4) → bit 1

8 (2^3) → bit 0

4 (2^2) → bit 1

2 (2^1) → bit 1

1 (2^0) → bit 1

Thus, the decimal number 23 = binary number 10111

Curriculum Connections:

- **Grades 7-9:** Students deepen their mathematical thinking and develop skills in applying ICT concepts (Mathematics, ICT).

7-9

This activity supports creativity, collaboration, and technological understanding. It also promotes critical thinking and expression skills.

Algorithm Dance

Students design and perform their own dance or presentation on the phone carousel play structure. They consider key factors like repetition, rhythm, and visual appeal to create a presentation that could gain popularity through social media algorithms. Performances are recorded and reviewed together. The group then discusses how algorithms influence content creators and viewers and reflects on ethical issues.

Curriculum Connections:

- **Grades 7-9:** Students enhance their expression skills in language studies, apply ICT tools, and develop physical and visual arts skills while practicing interdisciplinary collaboration (Mother Tongue and Literature, ICT, Physical Education, Visual Arts).

AUDIO TOUR

MY OWN ACTIVITY

7-9

This activity develops media literacy, critical thinking, and a deeper understanding of technology's role in society and urban spaces.

Audio Tour

The podcast episode serves as an audio tour and as material for comprehensive learning. The podcast covers the creation of Helsinki's first thematic playground, believed to be the world's first computer-themed playground. It discusses the development process, how the playground uses play to teach about computers and programming, and includes children's feedback on the completed park. The podcast is hosted by author-illustrator Linda Liukas, who developed the playground concept.

There is a printable worksheet to accompany the episode. Bring a portable speaker or suitable listening device.

Curriculum Connections:

- **Grades 7-9:** Students practice information retrieval, critical thinking, and multimodal literacy while producing and editing media content. They also gain an understanding of the impact of technology and urban planning on the environment (Mother Tongue and Literature, Geography, Biology, ICT).