Cosmos and Raspberry

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Together, we are supporting the 4th, 5th and 10th Goal of the Sustainable Development:

"Cosmos and Raspberry" is a fairy tale for children aged 9-12, the objective of which is to build self-confidence in girls and to inspire them to develop and undertake leadership roles in the technological industry.

Besides the fairy tale itself, the publication also contains substantive content addressed to parents and teachers, helping them to work with the text and prompting how to talk to children in a practical way about gender equality, and how to build in girls the feeling of agency and belief in their abilities or competences in the field of sciences.

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Once upon a time, there was a little girl who had very caring parents. They loved her more than anything. They would buy her plush clouds of all shapes, dolls with dresses threaded with gold, and floral teacups to make tea for her favourite stuffed animals. She had toys, games, books, but she could not play with anyone! The girl's parents would not let her leave the house because they were scared something bad would happen to her.

They also gave her nothing to eat but porridge, rice, and white chocolate. It was commonly believed in their country that only colourless and bland food was healthy for children. Colourful fruit? Red cherries and raspberries? Orange carrots? And above all, parsley, dill, and spinach?! Everything colourful and wild, especially green, could be dangerous. It was well known that a mushroom was poisonous because it was so lusciously red, and the only thing worse than that was the red apple with which the stepmother poisoned Snow White. The wilderness of the town and the surrounding forest was a great threat that children learnt about every day at school. Their country wanted to remain safe at all costs, which was taken care of by the Office of Children's Protection and Safety.

But the less wilderness there was in the children and on their plates, the wilder and more floral the names by which they were called became. The children's' imagination also flourished, thirsty for colours. And so, in her room, Rose had piles of sketch pads, a school tablet she loved playing with, books, and easels on which she painted bright clouds and shining sun rays. And although she was not allowed to invite anyone to play together, and could only see other children at school, her head was buzzing with crazy ideas because, in fairy tales, little girls do not always like to be good.

Rose wore light-coloured dresses but, secrety, she sewed extra pockets underneath the lining to hide milky candy drops, cables, and portable batteries inside. Because she was extremely clever, she was breaking the rules on her own terms – she read a lot about the brain and neurons, and then later at night, in her dreams, let her fantasies run wild. She then coded in her head a new world that she liked even more. On her portable school tablet, she then created a map filled with speckled mountains and children running through chocolate meadows. These places were full of fantastic flowers and multicoloured, delicious dishes.

Unfortunately, the dishes served by Chef Vanillabland, although very filling and nutritious, had the consistency of lumpy mush. Rose often had stomach aches after eating them.

She followed up her meals with white candy drops, but it did not help. That is why in her mind she was more and more often designing a world in which fresh cream cakes rather than clouds were flying in the sky and, instead of curtains, there was cotton candy hanging in the windows. Sometimes, she would send her fantasies on the display to Hyacinth and Narcissa, but they were becoming less willing to add anything of their own.

– Stop sending so much nonsense – Narcissa told her once.

– We need to focus on what is important – added Hyacinth . – On schoolwork.

Slowly, everything was losing its appeal, even fun.

On the other side of the town lived a girl named Berry who was very much like Rose, but quite different. And although her parents also loved her very much, they fell ill, so it was her grandma who had to take care of her.

Berry's grandma had raspberry hair, and, to the distress of her granddaughter, she did not care about her own safety and the safety of children in general. She walked barefoot in the forest, did yoga on the grass, collected wild herbs, and served spinach with dandelions! In town, people gossiped that she was friends with tigers living in the thicket, and in the evenings, she braided willow branches and sowed flowers – fantastic, colourful cosmoses – in the cracks of the town's pavements. Grandma had many mysterious activities, but she spent most of her time on her studies.

Interestingly enough, Berry's grandma was famous all over the world for her research but in the town everyone seemed to forget about it! She was many, many years old but sometimes she would still go to international conferences or give online lectures to doctors from around the world, after which she hand to spend a long time answering various questions in many foreign languages. She kept encouraging Berry to do her own experiments and look for what gave her real joy.

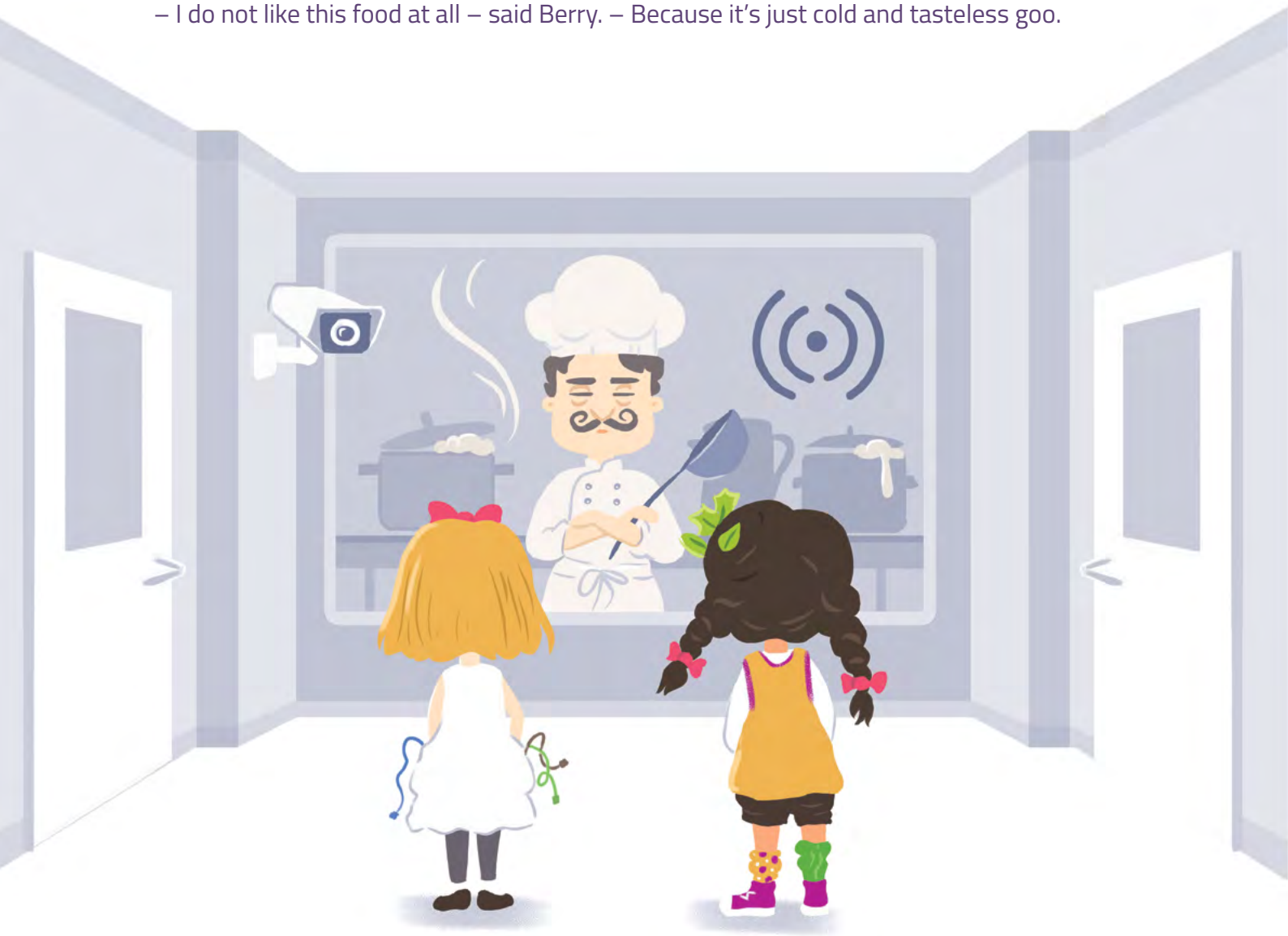
– Don't worry if something seems inappropriate – she used to say. – In my day, it was inappropriate for girls to code or compete with the greatest minds of this world.

Times had changed and now it was inappropriate for children to eat cherries straight from a tree, or to brew mint tea even though mint leaves were so deliciously soft and fragrant. The green colour was the most dangerous one and, therefore, fiercely eliminated at school. Grandma, however, had a laboratory at home, where not only did she study everything green, but also mixed, studied under the microscope, and then poured potions into bottles and labelled them with names which, however, did not mean much to Berry.

The little girl quietly agreed with her grandma that colours were more interesting than their absence, so every day she experimented with two different socks on her feet. She also liked to take her socks off sometimes, even the colourful ones, and run barefoot on the cushions of moss. In early autumn, she liked to shuffle through multicoloured leaves, which was not easy, of course, because all leaves in the town were immediately raked or blown to a land far far away. The same happened to fruit that appeared on trees. Berry, convinced by her grandma, sometimes hid apples, pears, and plums in tree hollows so that nobody could find them, but when she returned, most of the time there was no trace of the fruit left. At school, however, she did not say anything about them, about her grandma, or the fruit recipes that she liked to invent more and more. She wanted to be like other children, which, as you can imagine, was hard for her.

One day, Rose and Berry happened to stand next to each other at school and listen to a new order. The Office of Children's Protection and Safety decided that, from that day, students' meals would not only be colourless but also prepared specifically by Chef Vanillabland in such a sterile way that children would be even safer and healthier. Rose felt like she did not know what those words meant, and she looked at the girl next to her.

– I do not like this food at all – said Berry. – Because it's just cold and tasteless goo.



Rose giggled but stopped laughing when she felt the scary gaze of Chef Vanillabland. The school was supposed to have a friendly atmosphere of focus and work, so silence was required, and all the important information was shown on the tablets. On the tablets that children always had with them, and which replaced textbooks and notebooks, because they were way more hygienic and handier than school bags. Sometimes, a study group was successfully created, and then children could get to know each other better, but this was happening less and less often.

Berry, however, liked it when someone laughed, and since that day, she looked at Rose attentively and with increasing curiosity. She noticed a long wire often sticking out of Rose's hidden pockets and wondered what it could be used for. She sometimes saw creamy cakes suddenly flying over homework and was surprised that such a marvel could be created outside the kitchen! It was better than soap bubbles! If only it was possible to change the real world with imaginary cakes! That would be something!

So, when one day Rose grabbed her stomach, Berry said to her:
– Come with me!

And when they were alone, she offered Rose tea from her thermos, the recipe for which her grandma taught her. Rose gulped and almost spat all the contents on the floor.
– You want to poison me? - she screamed, and only after a while lowered her voice.

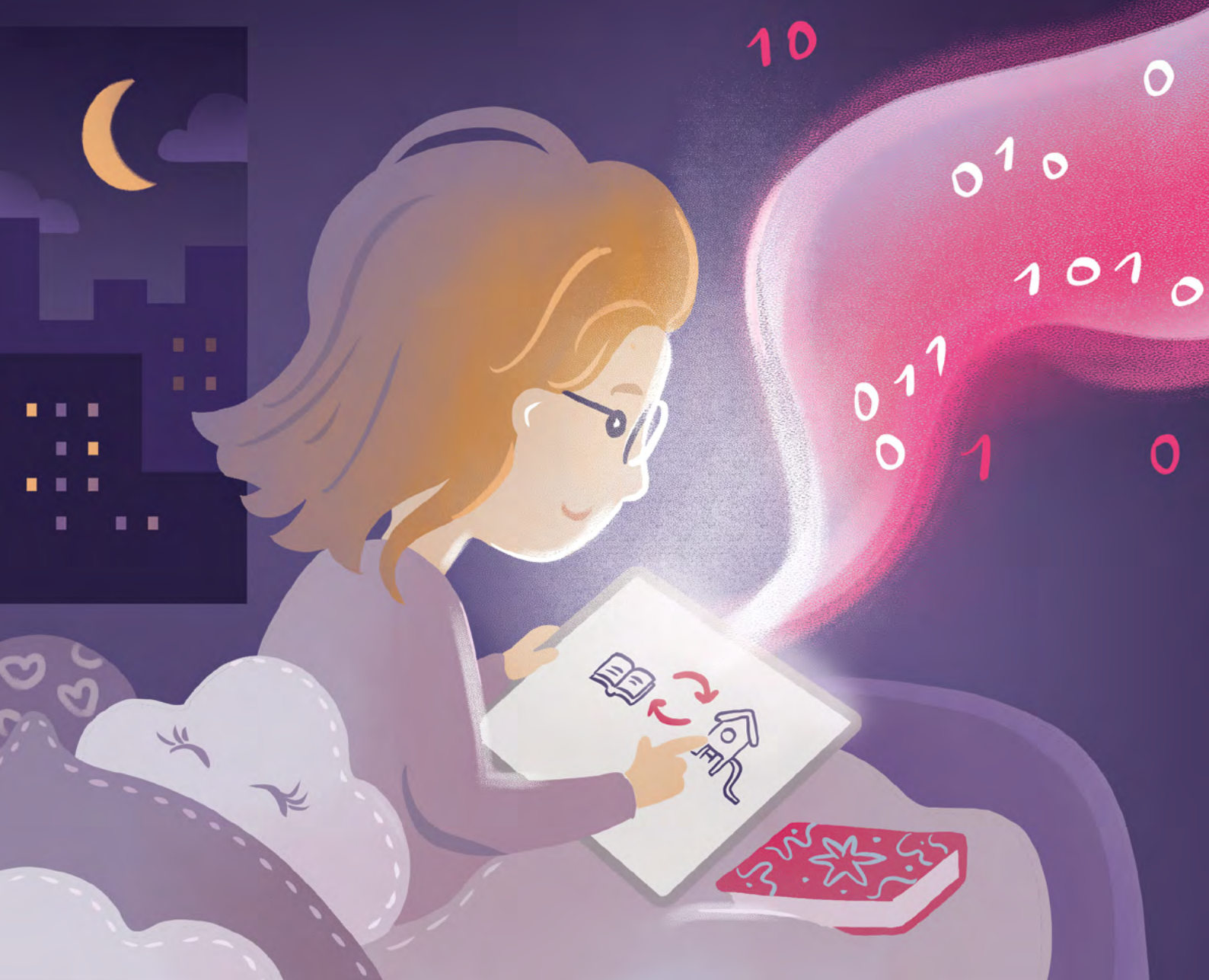
The girls looked around carefully, but no one approached them.
– It's not poisonous – Berry reassured her. – Mint, camomile, fennel, and sometimes wormwood. Everything is green but I drink it – she added quietly.

Many days passed during which the girls did not see each other. The tablets showed only homework, lessons and meal plans. For misbehaving and speaking about subjects other than schoolwork, children were punished with an additional portion of dessert, so almost no one wanted to get in trouble. Rose was put off by the thought of creamy clouds after being forced to eat mushy vanilla slop. Hyacinth, who used to come up with the most interesting things with her, was so pale that the girl started to be seriously concerned about him. Not only was she worried about her friends but also about herself. The lack of sunshine and physical activity together with colourless food might have been safe, but it was definitely very boring. Rose was worried she might actually die of boredom!

Only Berry remained cheerful. Was it thanks to her name, the content of her thermos, or maybe some other secret?! Berry smiled every time she saw Rose but Rose was a bit scared of this strange, wild girl, who had leaves, and sometimes even shoots of wild grass, in her braids. The forest was wild and dangerous!

One night, Rose could not sleep. She read a book about a wild girl who ate apples, flowers, and clouds, and came up with an idea that seemed so crazy she had to sit up on her cloud-shaped pillow. But maybe it could work? The children had their individual schedules displayed so that they all could safely develop their skills. Rose dreamed of all children running out onto the playground like they used to, at least once! White climbing frames and light sand covered with a tarpaulin had been long left unused, and the sports field was empty, covered in tarmac, and sad, with no trees – for safety.

The next day, the children were amazed when the tablets informed them that classes were going to take place on the school field and playground.
– Uh-oh – said Viola – But it's dangerous!
– Can we really do that? – asked Flora, looking in astonishment at her display with the timetable.



Someone shrugged their shoulders, walked up to the sandpit, and dug into it reluctantly, checking if any cats had peed inside. Someone else did a somersault, but only one because they remembered you could break your leg when falling. The children did not look happy, and yet Rose thought that was all they had ever dreamt of! She looked at Hyacinth but he just shrugged. Then suddenly, the headmaster stormed out of the building:

– Children – he shouted – This is some system error! The playground is too dangerous! The Office for Children's Protection and Safety has shut down all such places. Get down! Quickly! - he asked.

He sighed with relief when he saw that all children were safe and sound inside the school walls.
– Should I prepare extra dessert?' asked Chef, who suddenly appeared behind him. – After dessert, everyone is drowsy, and no one has cheeky ideas.'
– Yes - the headmaster agreed. – Today everyone will need an extra dessert. Including me.

The forest was dark and gloomy. Rose was really scared! Especially after what the headmaster told them over dessert about wild tigers that lived there! She walked and seemed to see eyes staring at her everywhere. Any tree could be dangerous! But her stomach hurt so much that she decided to find Berry and ask for her herbal tea. Now, however, she stood helplessly in the middle of a clearing, looked at the tablet, which only showed a green blur, and started crying. She had never been alone in the yard, let alone in a forest!

– Don't cry - she suddenly heard a familiar voice. – It's not so bad here.
Berry was jumping on the moss barefoot and grinning at her.
– I think I saw an alien with pink hair! – Rose screamed, although her stomach stopped hurting immediately.
Berry waved her hand and shook her head with disbelief.
– You saw my grandmother!
– Does she also walk in the forest just like that? – Rose was surprised. – Is she not afraid of tigers?
– Grandma thinks that the forest is safe, that this is our real home, and that tigers are imaginary... – Berry considered whether to add something else but fell silent.
– Safe? – Rose repeated with surprise. – We can't even be seen on GPS now.

The cottage where Berry lived with her grandmother was quite large, but mossy and painted green and purple.
– You can pick a grape - said Berry - and eat it. Although it tastes better when it is dried, she admitted.
She reached for the fruit and handed a handful to Rose, who accepted it with a slight hesitation.
– It is delicious – said the stunned girl after tasting the fruit.
But then she almost choked, because suddenly a beautiful woman appeared in the doorway. She had long, raspberry-grey hair, large silver earrings in her ears, red-rimmed glasses and a sweater with clouds, cosmoses, and raspberries on it, so vivid that Rose wanted to reach for them.
– You finally invited someone – Grandma said to Berry and smiled at Rose.

Rose entered and was amazed once again. There was a fire burning in the stove, dried herbs hanging on the walls, and nothing, really nothing, was plush and soft like at her house.

– Berry, what did you use to make us compote this time? – Grandma asked. – I'm thirsty after work.

– Raspberries and pears.

– I've never drank compote – said Rose. - What's that?

Grandma sighed.

– Try it. You may not like it, but I think it's delicious! It improves your immunity. Berry has a knack for fruity recipes. Somehow, she knows how and what to combine to make it perfect - her silver earrings jingled as she smiled. – And then you can go for a run or whatever little girls do these days and not have to worry about anything for a while. I have to go back to the laboratory because I'm waiting for important results.

Grandma grabbed a tablet that Rose had been dreaming about for a long time.

– Do you use Cosmotiary? – the girl asked excitedly.

Grandma smiled broadly.

– Do you want to see what I use it for? – she asked.

Rose nodded.

The room they entered looked more like a spaceship than a wooden cabin. There were computers, servers and microscopes everywhere. Everything of the latest generation.

– Can you fly to space from here? – asked Rose with excitement.

You know what, it wouldn't be an impossible task – Grandma replied mysteriously.

Rose ran to the monitor and blushed when she started reading the algorithm written by grandma.

– A three-dimensional model? What kind of miracle is this?! – the girl was surprised.

– It is an algorithm for designing drugs for rare diseases based on natural ingredients. Straight from the forest – Grandma explained.

– Oh, how does it work?! Because I don't fully understand this provision, but it seems to change the world!

It was the first time Rose read such a wonderful code.

– You are close because it is a machine learning algorithm that, based on a two-dimensional diagram of a given molecule, is able to present a three-dimensional model of it – grandma replied, thinking that this scientific sentence would end the conversation. She still had a lot of work to do.

– Model of attachment to proteins?! – Rose became interested.

– What proteins? – asked Berry, who had just come in with a bowl full of dried cranberries, but Rose swiftly grabbed her grandmother's hand.

– The point is that you are looking for suitable plant molecules that are able to bind to the proteins in our body, right? And this code speeds it up, right? – Rose asked with hope and instinctively reached for a handful of cranberries.

– You're a smart cookie – Grandma replied.

– When coding, I also follow the natural cognitive processes of the brain – said Rose. – At least I'm trying! And I consider the brain to be one of the most amazing inventions in the universe!

– Yes, that's exactly how artificial intelligence works – Grandma smiled. – And if you want, I'll show you how I do it.

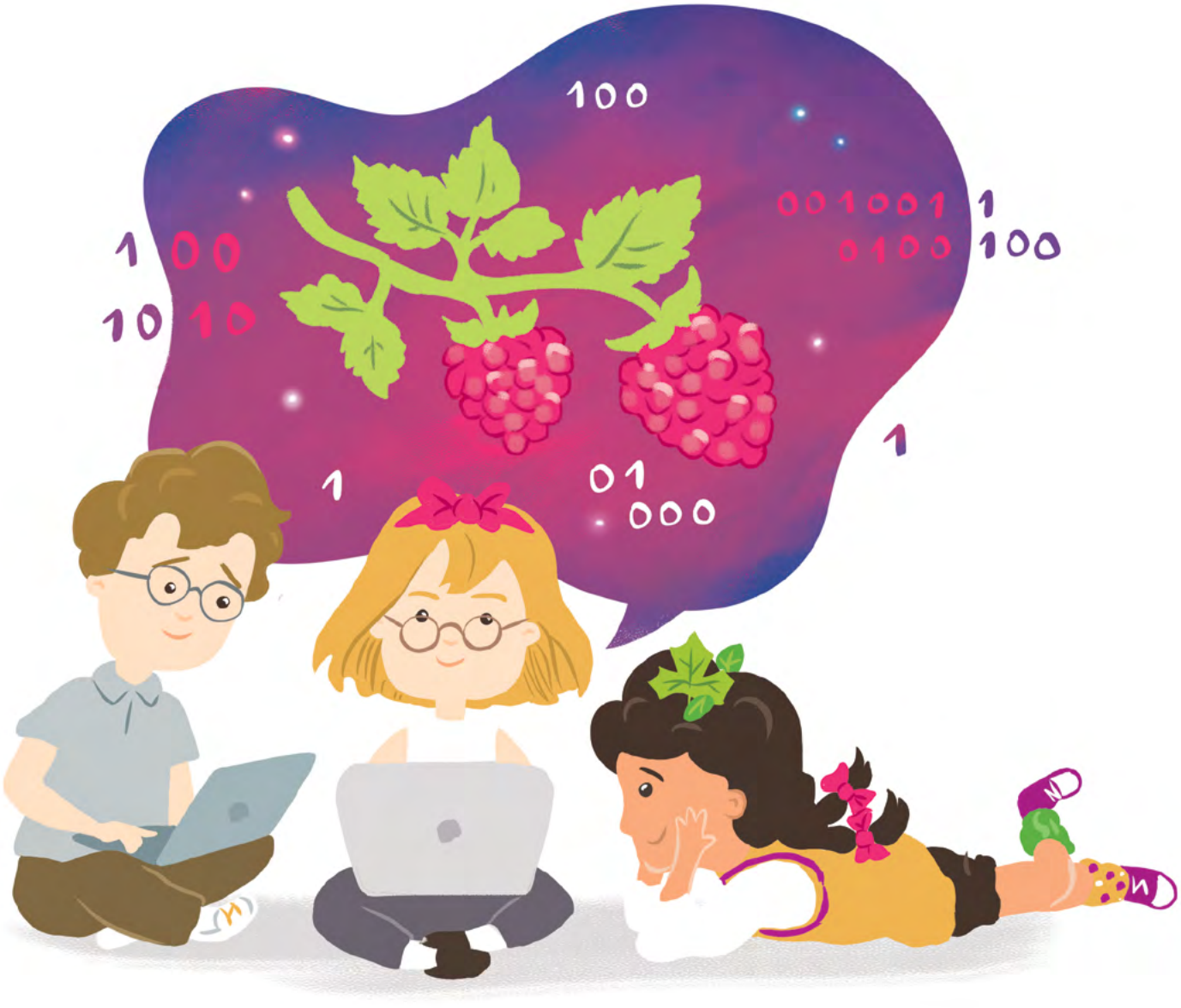
Rose glowed with satisfaction. She looked at the red balls she held in her hand. She had never tasted anything as delicious as this! Before her eyes, this amazing raspberry-grey-haired scientist transformed into the queen of the world, who could fly into space or do anything she wanted with just a few lines of code.

Berry was jumping on one leg and telling Rose about her grandmother.
– You know, grandma says that plants contain all the wisdom available to us. Supposedly, in this forest there are medicines for all human ailments and diseases, you just need to discover the language of plants and what helps with what ailment.
– Do you think she'll be able to investigate all this on her own? – asked Rose. She dreamed of helping with such work!
Berry shrugged in reply.
– Okay, time for a picnic! You have to try my new strawberry mousse.
The girls spread a blanket in the forest clearing. Rose thought she was too excited to eat but once she started, she couldn't stop! Everything seemed so delicious! Especially the most colourful dishes! Before she returned home, she stuffed her pockets with dried cranberries. Suddenly everything the headmaster said about the forest seemed very strange. And why didn't they give them tasty food? "I wish we could show other kids how delicious this is!" – thought Rose, eating the raspberry cake that Berry had packed for her.

– Your grandmother is so powerful! – said Rose, one day after lunch, still thinking about her visit to the laboratory. – She could charm all the tablets and make children eat raspberries instead of this protein mush.
Berry handed Rose a thermos with tea and thought for a while.
– You could add raspberries to the recipes yourself!
Rose stopped chewing the cake. The last stunt did not go well. Why should it be any different now?
– I can do it – she said hesitantly. – But what is the point?
Berry thought deeply.
– This time we just have to add a bit of raspberry to each recipe and convince a few more people to join us. Nec Hercules contra plures, says grandma. It's an easy prank, but we can't do it alone!
– Yes! – Rose was happy, hope began to sprout in her heart again. – We have to act together. For example, I know how to enter the school system and change the recipe, but I have no idea what to add to this lousy dessert apart from raspberries to make it a little tastier!

– But I know that! – said Berry with excitement. – I have a whole pile of colourful recipes, but I have no idea how to get to Chef's secret system.
– If we manage to convince Hyacinth and use the Cosmotiary, I could not only change the code of the secret dessert recipe, but maybe also dinner – dreamed Rose. – And then all the bland meals that they feed us!
– One step at a time – Berry smiled.

And just like that, slowly, slowly, Rose and Hyacinth, changing the menu slightly based on Berry's suggestions, introduced more and more changes in the childrens' lives. One small change generated another, more and more children joining their pack, until suddenly there was no turning back. All the children felt better. Parents were also surprised to suddenly re-discover the forgotten taste of apricot jam and the pleasure of reaching for an apple straight from the tree.



In a new project, an original map of the town was developed on school tablets, which included squares, orchards and vegetable gardens belonging to residents. Everyone could easily reach the apple and pear trees that bent their branches, feeding hungry children and adults. It turned out that not only Berry's grandmother knew about wild herbs. More and more grandmothers and grandfathers added places where herbs and spices grew to the map and children marked areas where wild raspberries and asparagus grew. The forest was no longer dangerous and everyone forgot about the tigers. In the shared cloud created by Rose, people began to share their own recipes and harvests, which were more abundant that year than ever before. The whole land slowly regained its joy, and the children their rosy cheeks.

Now the headmaster was bringing juicy apples from his orchard and offered them to the children during breaks. Only Chef Vanillabland moved somewhere far far away. Berry's grandma walked happily around the town and looked at the cosmoses that smiled at her from every crack in the sidewalk. At last, everyone was smiling at each other now.

Recipe for power compot

Ingredients:

- **5 apples**
- **2 pears**
- **a handful of raspberries**
- **a few pitted dates**
- **8 almonds**
- **anise**
- **cardamom**
- **turmeric**
- **licorice**

Bring water to the boil, add turmeric - the water will turn orange. Then add pitted dates, almonds and licorice. You can add one or two star anise to the compote if you like its taste (try it!). Then add a few cardamom seeds. Wash the apples and pears, then cut them into quarters, removing the seeds. You can leave the skin on. Add to boiling water. Wait until the compot is cooked and then add a handful of raspberries to taste. You can sweeten it with honey and drink it warm or cold.

Cheers and bon appetit!

Zofia Karaszewska & Sylwia Stano

Fairy tale therapy – it works!

We often wonder what can help our children have a good life and provide them with the best possible start. Still, not everyone realises they have access to a simple yet very effective tool. This tool is reading together, aloud, and what is equally important, having a shared conversation about the struggles of favourite fairy tale characters. For most children, it is the best way to build close bonds and simultaneously educate through fun.

Fairy tale therapy

Fairy tale therapy is an effective method that supports a child's development, using a three--stage process that includes reading, discussing, and educational games. Reading together builds a bond and understanding, meets emotional needs, fosters the psychological development of a child, strengthens self-esteem, and most importantly – helps in solving problems. Reading begins the process of fairy tale therapy to which children are invited. A fairy tale in the hands of an adequately prepared parent or guardian is an excellent educational tool since, thanks to well-prepared activities enriched with structured conversation and games, we can develop correct behaviours and competencies, which address the challenges of the modern world. During fairy tale therapy, even the youngest children can learn to identify and name their emotions, adopt new thinking patterns, develop creativity, and prepare themselves for taking up the next challenges.

What kinds of fairy tales are used in fairy tale therapy?

In fairy tale therapy, we use three types of fairy tales, which differ from each other in terms of the subjects raised, aims, and structure. The first two types – **psychotherapeutic and psychoeducational fairy tales** – are used with a similar aim; however, the former usually touches upon topics that require more sensitivity and specialised knowledge. Both aim to, primarily, support the cognitive and emotional development of a child. They reduce anxieties, help work through sadness or anger, boost confidence, and address the need for acceptance, love, belonging, and safety. They show behavioural patterns, and their plot clearly emphasises desired attitudes and ways of acting - thanks to the mimicry mechanism, a child can identify itself with the fairy tale's characters and adopt their behaviours.

Psychotherapeutic and psychoeducational fairy tales have a set structure, and their crucial elements include: the main character, a problem, background of the story, supporting characters, and a happy ending (finding a solution to the problem). It is important that one fairy tale focuses on a singular problem (challenge), which is or can be faced by a child. This is where the main differences between psychoeducational and psychotherapeutic fairy tales occur. The former can raise issues such as tidying toys in your room, segregating rubbish, caution in interactions with strangers, saving water, or reacting to violence among a group of peers. On the other hand, psychotherapeutic fairy tales usually touch upon issues related to potentially traumatic experiences of a child, such as cancer, death of a loved one, or war.

The third type of fairy tale are relaxation fairy tales. They aim to evoke a feeling of relaxation in a child, lower their tension, and calm them down. They can be used after an emotional day or a difficult, stressful situation for a child. Relaxation fairy tales encourage visualisation and appeal to a child's imagination. Their reading usually takes less than 10 minutes and can take place both during the day and in the evening, before sleep. For this fairy tale type, it is important to emphasise auditory (e.g., the sound of waves), visual (e.g., sun rays falling on one's face), and sensory effects (e.g., soft and moist grass under bare feet).

What are the aims of fairy tale therapy?

1 EDUCATION

To show a child effective way of solving problems and dealing with difficult situations. Thanks to fairy tale therapy, we share knowledge about ourselves and the world with the child, and we show them new thinking patterns which inspire the child to face challenges.

2 SKILLS DEVELOPMENT

The content of therapeutic fairy tales encourages taking action and discovering new skills in a child, both in the sphere of emotions and broadly understood social competencies.

3 BUILDING RELATIONS

This relates not only to the relationship between a child and a fairy tale therapist but also to the relationship with yourself – including acceptance, enhancing self-esteem, and building confidence in your agency and talents.

4 THERAPY

Support for a child who is overwhelmed with deep anxiety, fear, or sadness. It allows the child to get used to those emotions, express them, and find a way to take a closer look at a difficult situation and look for an appropriate solution.

What are the psychological mechanisms occurring thanks to the fairy tale therapy?

1 MIMICRY

The strongest process during fairy tale therapy. Through the imitation of the main character, a child adopts its patterns of behaviour, communication, and ways of thinking. The task for a parent or guardian is to point out the behavioural mechanisms and attitudes that are going to aid the child's development and support its socialisation.

2 DESENSITISATION

Getting used to a difficult emotion or a situation through a story described in a fairy tale. Thanks to the fairy tale, a child, remaining in a safe space with a loved one, has an opportunity to look at a situation causing anxiety a bit differently. Multiple repetitions of the story decrease the emotional influence of a stress-inducing stimulus.

3 RATIONALISATION

Showing the child anxiety-producing factors through the content of the fairy tale in order to help them understand the situation or state they are in. Moreover, the child has an opportunity to realise they are not alone in their anxieties, and the fairy tale's characters also face different emotions such as anxiety or sadness.

4 CONCRETIZATION

Contents of a fairy tale provide a child with information on how to name emotions or emotional states they face. They allow the child to look inward and give tools to describe what is happening. They enrich the child's emotional language and develop the skills of naming different situations the child might find themselves in.

5 DEVELOPING EMPATHY

Getting to know the characters of a fairy tale and joining their adventures aims to encourage the child to empathise with their emotions. The mechanism of depersonalisation also takes place here, which aims to encourage the development of skills allowing us to visualise objects or situations from the perspective of a person who accompanies us in a conversation or is sitting in front of us.

The process of fairy tale therapy

STAGE 1 – READING

We begin the process of fairy tale therapy by reading together. While reading, it is worth paying attention to:

- voice modulation;
- eye contact with the child – ideally glancing, without excessive staring at the child or completely avoiding eye contact and concentrating on the book;
- tone of voice and the pace of speech;
- showing illustrations found in the book;
- relaxed posture during the reading so that the child can also relax and focus on the content of the book.

STAGE 2 – DISCUSSING

Proceeding to the second stage – discussing – we invite the child to answer a few questions related to the story they have just heard.

We start with the simple ones, related to the main character, their friends, or places where the story takes place. Those are usually closed questions, requiring a short answer – sometimes only 'yes' or 'no'. For instance: 'Did the main character have a favourite friend?', 'Where did the action of the story take place?', 'What was the name of the main character?'.

Next, we move on to questions related to the experiences of the characters, their feelings, or the ideas they came up with while trying to face the challenge presented in the story. For instance, 'What adventures did the main characters have? How did they deal with them?', 'What did the main character feel when he was meeting new friends?', 'How would you feel in this situation? What would you do?'.

Searching for answers to the questions triggers the ability to use the information received by children, makes it organised, and encourages creativity and expressing their own opinions. Questions related to the states or emotions of the characters allow children to develop a language of emotions and create a space to discover the child's emotional sphere.

STAGE 3 – PRACTISING

The third and last stage of the fairy tale therapy is practicing. The fairy tale therapist invites the child to the process, but it is the child who mostly decides what shape the play will take. The therapist provides an exercise scenario based on the story, and then, in the spirit of the fairy tale therapy rules, follows the child's needs, ideas, and pace, smoothly incorporating contents that are important for the child to remember and adopt. The child can play on its own or invite the fairy tale therapist to join the game. The exercise reinforces the development of creativity in the child and allows it to absorb and use information acquired. This is also a stage during which we tighten the bond which was built during the discussion of the fairy tale with the child by showing them trust through support in training new skills and allowing them to make independent decisions.

Fairy tale therapy – questions and answers

HOW DO YOU GET PREPARED FOR FAIRY TALE THERAPY?

Before diving into fairy tale therapy, always familiarise yourself with the content of the story you want to read. This process aims to check it against the examples it provides or patterns of behaviour that are consistent with what we actually want to provide to the child.

Check your energy level and emotional state, which the child is going to subconsciously reflect. If the fairy tale therapist is going to be tense or sad, it is going to be hard to support the child in their emotional states or in the search for ways to reduce anxiety.

Prepare sample questions that you can ask at the stage of discussing the fairy tale – it might be the case that you will not use them because, during reading, other questions will come up; however, the feeling of being prepared will increase your confidence and effectiveness during the fairy tale therapy process.

Prepare tools that you plan to use during the exercise stage – thanks to that, you will gain more time for playing together instead of wasting it on searching for necessary props.

WHO CAN CONDUCT FAIRY TALE THERAPY?

In order to get to know the whole process and effectively use its educational functions, it is recommended to participate in workshops related to fairy tale therapy. They will uncover various mechanisms and tools aiding the whole educational process, simultaneously giving the feeling of substantive safety to the future fairy tale therapist. This option is recommended to people who, in their daily work or child care, want to actively make use of fairy tale therapy as a form of support and development for their charges.

WHOM IS FAIRY TALE THERAPY INTENDED FOR?

Fairy tale therapy is one of educational and developmental forms belonging to a wider category called bibliotherapy. It is intended especially for children aged 3–10, but its use is so versatile that there may be situations when fairy tale therapy is also used in groups of slightly older children. In terms of the youth over 15, we can talk about the bibliotherapy process that uses slightly different texts, and the process itself is followed in a different way. Fairy tale therapy can be conducted both in an individual form (a fairy tale therapist and one child) as well as in a group. The latter is used in schools, educational care centres, libraries, or after-school care. The difference between individual and group fairy tale therapy is based primarily on the need to master the rules of working with a group and the skills to simultaneously focus attention on multiple people.

Scenario for individual "Cosmos and Raspberry" classes

GOALS:

1. Strengthening girls' sense of agency through support in building self-confidence and belief in your own abilities.
2. Developing social competences, such as assertiveness and building relationships in the peer group.
3. Identification and naming of emotions experienced.
4. Developing attitudes such as tolerance and support for gender equality.
5. Recognising opportunities and threats related to the development of new technologies.

AGE: 9–12 years old

MATERIALS: sheets of paper, crayons or markers

TIME: 45 minutes

Course of classes:

1. **Greeting each other and starting the meeting by asking about the emotions with which the child came to class. If necessary, you can ask follow-up questions such as:**

   - Did something pleasant/unfortunate happen to you today?
   - Did anything funny/sad/surprising happen today?
   - Are you full of energy or rather tired?

2. **Invitation to joint visualization:**
   Ask the child to imagine a person who can change the world.
   What does this person do? What do they look like? Is it a man or a woman? How are they dressed? What accessories do they have?

3. **Introduction to the topic (you can start by smoothly moving from visualization).**
   Ask the child why they portrayed a world-changing person as they did. Talk about how technology can positively influence reality. Can girls do it just as well as boys?

4. **Reading of the fairy tale**
   Read the "Cosmos and Raspberry" fairy tale.

5. **Discussion of the fairy tale**
   Ask some closed and open questions about the fairy tale. You can use sample questions or come up with your own.

6. **Closed questions:**
   - What were the names of the main characters in the fairy tale?
   - What did Rose like to do?
   - What did she carry in her pockets?
   - Did the children like the bland food?
   - What did Berry look like?
   - What did Rose give Berry for stomach ache?
   - Where did Berry live?
   - Was the forest dangerous?
   - What did Berry's grandmother do?
   - Who helped the girls improve the school's menu?

Open questions:

- Why weren't children allowed to eat colourful things?
- How do you think Rose felt when she couldn't play with other children?
- What did the children think about the vanillabland food?
- What did Berry think about safety rules at school?
- Why do you think grandma encouraged Berry not to worry about what was appropriate and what wasn't?
- How might grandma have felt when she was told that it was unbecoming for girls to code? Why didn't she listen to these words?
- Why did Rose have a stomach ache? What do you think she felt when Berry gave her the herbal tea?
- Why did Rose want to make changes to the school schedule?
- What did Rose think after meeting Berry's grandma? Do you think they liked each other?
- Why wasn't Berry sure she would be able to make changes to the school menu?
- What did she feel when Berry suggested a solution to her?
- What do you think made the plan to introduce changes successful this time?
- How did the children at school feel when they suddenly started eating tasty meals?

Good to know!

- During individual fairy tale therapy, pay attention to ensure that the number and speed of the questions asked is not overwhelming for the child and does not cause the effect of putting the child on the spot.
- Wait patiently for the answer - try not to create a situation where you ask a question and answer it yourself. Then there is no point in asking questions, as it tells the child that you do not trust them and do not believe in their ability to find answers on their own.
- If the child delays the answer, ask what they need to find the answer. They may want you to read the fragment of the fairy tale you are asking about again.

7 Exercise

A suggestion for an exercise to be performed between the caregiver and the child.

Share a list of female inventors with the child. Think together what the world would be like without these inventions.

Mary Anderson invented the first car windshield wipers because she noticed that in the rain drivers couldn't see anything and had to lean out the side window to see what was happening on the road.

At the age of 12, Sally Fox became very concerned about fabric dyes which were made using pesticides - very harmful chemicals. She devoted a lot of effort and work to create natural dyes that revolutionised the production of clothes.

During World War II, Hedy Lamarr invented a very advanced system for controlling torpedoes using radio waves. Her invention led to the future creation of Wi-Fi Internet.

Grace Murray Hopper created one of the first tools that changed spoken language into computer language. She is considered the mother of the COBOL programming language.

Stephanie Kwolek invented the material used to make combat helmets, bike helmets and bulletproof vests.

Simona Gabriela Kossak – professor of Forest Sciences, biologist, nature conservation activist. For her achievements in the scientific field, she was awarded the Golden Cross of Merit. She was the co-creator of the UOZ-1 acoustic repeller which warns animals of a passing train, saving them from being hit.

Annie Easley – mathematician and programmer, worked for NASA where she wrote code for navigation systems and space rockets.

Patricia Bath – inventor and scientist who invented a laser device for cataract correction, saving many people from vision loss caused by this disease.

Ask the child to imagine that they are a great inventor and come up with something that they think solves the world's biggest problem. Invite the child to draw their dream invention.

This exercise aims to develop the child's imagination and creativity, while strengthening their sense of agency. The task will also help the child realise that many useful items around us were invented by women.

Scenario for group "Cosmos and Raspberry" classes

GOALS:

1. Strengthening girls' sense of agency through support in building self-confidence and belief in your own abilities.
2. Developing social competences, such as assertiveness and building relationships in the peer group.
3. Identification and naming of emotions experienced.
4. Developing attitudes such as tolerance and support for gender equality.
5. Recognizing opportunities and threats related to the development of new technologies.

AGE: 9–12 years old

NUMBER OF PEOPLE: no limits

MATERIALS: wide paper tape, sheets of paper, a dozen or so colourful newspapers and magazines, scissors and glues

TIME: 45 minutes

Course of classes:

1 **Greeting the children and asking them what emotions they come to classes with.**

2 **Invitation to exercise:**

Divide the room in half by sticking tape to the floor. Explain to the children that you will read statements that they should respond to either by standing on the left if they disagree with the statement or on the right if they agree with it. The distance from the line will indicate the strength of their convictions - the further from the line they stand, the stronger their convictions.

Read some statements about gender equality, new technologies and children's sense of agency. You can use examples below or come up with your own.

- I feel that children can influence what happens at school.
- Boys and girls are equally smart and talented.
- I think I will be able to change the world in the future.
- Girls are better at maths than boys.
- Boys are better at science than girls.
- I like to play computer games.
- There are more girly or more boyish school subjects.
- I like programming.
- I would like to create a new game or application for my phone in the future.
- I would like to have a self-driving car in the future.
- I would like to create a robot that will clean my room for me.

After each statement, ask a few children on either side of the line to explain their opinion. After the conversation, give the children a chance to change where they stand.

3 **Introduction to the topic:**

Talk to the children about how, in their opinion, technology can impact the world. What positive applications do they see for new technologies? Ask the children why they should be interested in programming. Talk about how diverse experiences and different views of the world make it worthwhile for both girls and boys to be interested in technology.

4 **Reading of the fairy tale**

Read the "Cosmos and Raspberry" fairy tale.

5 Discussion of the fairy tale

Ask some closed and open questions about the fairy tale. You can use sample questions or come up with your own.

Closed questions:

- What were the names of the main characters in the fairy tale?
- What did Rose carry in her pockets?
- What did she secretly send to her friends on the tablet?
- What helped Rose with her stomach pain?
- Did children want to play on the playground?
- Where did Berry live?
- What did the girl's grandmother do?
- Did Rose like Berry's grandmother?
- Who changed the school menu and created a map with the inclusion of fruit trees and herbs? Who helped them?

Open questions:

- Why did the children only eat beige foods?
- How do you think Rose felt when other children did not want to create a virtual world with her, that is full of delicious dishes?
- Why did Rose sew pockets into her dresses and Berry wear mismatched socks?
- How do you think Berry felt living in a forest that others considered dangerous?
- Why did grandma encourage Berry to experiment regardless of what others might think?
- How might the grandmother have felt when she was once told that girls shouldn't programme? Why didn't she listen to these words?
- Why did Rose often have a stomach ache and other children were pale?
- How do you think Rose felt when Berry gave her a green herbal tea to drink, even though they were not allowed to consume anything green?
- Why did Rose go to the forest? How did she feel when she saw the raspberry-haired grandmother?
- What impression did Berry's grandmother make on Rose when she showed her the laboratory? Why did this visit inspire her?
- What did Rose think when Berry told her that they could secretly make changes to the menu themselves?
- Why did Rose manage to make changes at school this time? Do you think it is worth collaborating with others to achieve your dream goal?

Good to know!

- When discussing fairy tales, create space for each child to speak so that they have a chance to answer the question.
- Encourage them to look for answers, supporting children by reminding them of the content of the fairy tale - do not force them to give answers, this process should be safe and respect the child's boundaries.
- If several children want to answer the same question, arrange the answers in order. If there is one simple answer - ask the group who volunteered first and decide together who will answer. In this way, you show children trust and invite them to make decisions and give them the opportunity to co-create a given situation.
- Encourage independent expression using the "I" pronoun - make sure that children try to speak for themselves, without using so-called smoke screens in the form of phrases: "we are all like that", "everyone feels like that", "everyone thinks like that" - these types of statement may indicate the child's lack of sense of security in the group, which is needed to express themselves freely. They may also be a signal that the child is not ready to take responsibility for their words. It is then worth strengthening the child's sense of acceptance and safety so that they want to practise speaking on their own behalf and thus take responsibility for it.
- If it happens that one of the children is less interested in the story and tries to distract the others, pause. Ask in a supportive way what the child needs to focus, what you can do for them. Draw attention to the fact that you really want them to take part in fairy tale therapy together with other children, because they are as important as all the children in the group and it will be of great value for you to hear their opinion after reading the fairy tale.
- Encourage all children to speak when you are showing them illustrations. It is important to create space for everyone to express themselves freely. Therefore, invite them, while trying not to put pressure on them - do not use statements such as: "Well, say something, you are the only one out of the whole group who hasn't said anything yet", "You don't want to be worse than the rest, do you?", "What about you, I know you can do it, don't be shy". Fairy tale therapy is a process that is intended to encourage children to acquire new skills and expand self-awareness and knowledge through education, and not to make them feel guilty that they do not know or cannot do something.

6 Exercise – Map of dreams about changing the world

Prepare A3 sheets of paper, a dozen or so colourful newspapers and magazines, as well as scissors and glue. Instruct the children to look through magazines and cut out anything that they think will help them change the world and fulfil their dreams. These can be both photos showing useful tools for this purpose (e.g. a computer), as well as symbols showing features or skills that children want to acquire, or even inspiring slogans or single words. When they finish looking through one newspaper, they can pass it on and take one that someone else has already looked at.

After each person in the group has collected the clippings, ask the children to plan where they will glue specific pieces from magazines. At this stage, they can discard those clippings that will not prove useful to them. It is worth dividing the map of dreams into a few spheres, e.g. in one corner put dreams related to knowledge and science, in the second - those related to career, in the third - with authority figures and idols, and in the fourth - with family, friends and loved ones. It's important to remember that the map is meant to be focused on each child's own dreams and goals. Then ask the children to use glue and newspaper clippings to create a collage - map of dreams of how they can change the world. Ask volunteers who completed the map to share why they would like to influence their environment in this way.

The task aims to make children aware that their dreams are important, give them a sense of agency, and strengthen their belief that they can influence the world around them.

Article by Subject Matter Expert

"What the world will look like in 15 years will depend on us doing everything in our power to ignite the development and potential of a 10-year-old girl. When a girl is able to enjoy her rights, stay healthy, complete education and make decisions about her own life, she and everyone around her wins. Whenever a girl's potential goes unrealised, we all lose."

dr Babatunde Osotimehin
United Nations Under-Secretary-General
and Executive Director United Nations Population Fund (UNFPA)

Ada Lovelace (mathematician), Alice Ball (chemist), Cecilia Payne-Gaposchkin (astronomer and astrophysicist), Dorothy Hodgkin (biochemist), Lise Meitner (physicist), Maria Göppert-Mayer (physicist), Mary Aning (palaeontologist), Nettie Steves (geneticist), Rosalind Franklin (chemist and X-ray crystallographer)

What do they all have in common? Certainly, gender and scientific passion in fields abbreviated as STEM (science, technology, engineering, mathematics) and ICT (information and communication technologies). There are, however, two other, less visible common features. Firstly, our heroines lived in times when even the most talented women had no opportunity for education, development and work in science due to harmful stereotypes and restrictions on civil rights. Secondly, even though their discoveries changed the fate of millions of people and revolutionised science, today's girls and boys, going to Polish schools, will never read about any of them in any of their textbooks: neither mathematics, nor physics, nor chemistry, nor geography, not even history. For example, only 4% of figures named in school history books are women. Among female scientists, only one ever gets mentioned: Maria Skłodowska-Curie.

We know that one of the main reasons why it is more difficult for girls to plan and pursue educational and career paths related to ICT and STEM is the lack of available, inspiring female role models in their immediate educational environment. To this we must also add enduring sexist stereotypes, lack of faith in one's own abilities, and insufficient support from their environment. We can reduce these barriers by supporting girls in building their self-confidence and courage, giving space to discover the world and creativity, showing practical applications of technology in life and showing the diversity of roles, professions and women's successes.

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1 I. Chmura-Rutkowska, Gdzie się podziały wszystkie wynalazczynie? Scenariusz zajęć dotyczący wspierania równości płcy w szkołach, poszerzający listę postaci historycznych w programie szkolnym o wynalazczynie i ich odkrycia, Centrum Edukacji Obywatelskiej, Warszawa 2020, <https://szkolatolerancji.ceo.org.pl/sites/szkolatolerancji.ceo.org.pl/files/rr_-_gdzie_sie_podzialy_wszystkie_wynalazczynie.pdf>.

2 I. Chmura-Rutkowska, E. Głowacka-Sobiech, I. Skórzyńska, Niegodne historii? O nieobecności i stereotypowych wizerunkach kobiet w świetle podręcznikowej narracji historycznej w gimnazjum, Poznań 2015.

Economic development is based on technological innovation. We are already dealing with a gap of employees with sufficient competences. The labour market in this area will continue to grow. Women represent great, still "frozen" economic potential. However, there is another, more important challenge. The development of science and engineering, digitalization and subsequent computerization, automation and robotization are used in many ways to fight the climate crisis, and research clearly shows the advantage of women over men in pro-ecological attitudes both in the areas of knowledge, awareness and behaviour, as well as readiness to act. Already by the age of 12, girls show higher awareness of sustainable development than boys, and this difference, in favour of girls, increases with age.

Ecological transformation is linked to technological and digital transformation, and the combination of pro-ecological thinking with STEM and ICT competences is a great need and potential for the changing world. Green energy, energy-efficient construction, low-emission transport and in vitro animal protein are just some of the areas of intensive research and innovation in which advanced engineering and technologies are and will be used. In short – effective saving of the planet is a task for IT specialists, engineers, automation specialists, specialists in robotics and AI, telecommunication and related areas.

Among these, will there be female IT specialists, engineers, robotics and AI specialists? Will women, with their "ethics of care" culturally transmitted for generations, have a chance to influence the fate of the planet and humanity? Will their talents, knowledge, perspective and experience translate into discoveries, inventions and innovations?

This depends mainly on the beliefs and attitudes of adults whose upbringing and education of children is, unfortunately, still too often guided by stereotypes and gender biases, according to which girls "have no predispositions", "are not suitable" and "by nature" are less capable in science and new technologies. Meanwhile, this is nonsense!

3 I. Chmura-Rutkowska, A. Kozłowska, Młode wartości. Jakiego świata chce pokolenie Z reprezentujące obszar ICT i STEM? (Young Values. What kind of world does the part of the Z generation representing the area of ICT and STEM want?), Fundacja Edukacyjna Perspektywy, Warszawa 2022, <https://womenintech.perspektywy.org/documents/raport-2022-mlode-wartosci-pl.pdf>.

Waste of girl's talents

Many studies point to the big problem and consequences of "wasting the talents" of girls and women in the fields of science and technology. In 2017, globally, the percentage of women studying engineering, manufacturing and construction, or information and communication technologies was below 25% in more than two-thirds of countries (UNESCO, 2020). In OECD countries it was only 30%. In Poland, in 2022, women constitute 35% of all people studying at public technical universities, but they most frequently choose technical fields related to interior and landscape architecture and biomedical engineering, whereas in fields such as applications of computer science in electronics, automation and industrial robotics, the number of female students is less than 5%. Women's participation in new technology fields has remained the same for many years and currently amounts to 6% of students.

The problem is certainly not, as stereotypes say, "natural predispositions", i.e. girls' cognition or intellect. Research and analysis of educational results prove that girls are as good at science as boys. In the largest Trends in International Mathematics and Science Study (TIMSS), in 2019, the achievements of boys and girls at the 8th grade level in science and mathematics was shown to be very similar in many countries, with girls in some countries achieving better results than boys. At the same time, regardless of actual results and successes, girls have less confidence in their maths and science abilities than boys. This means that they lack self-confidence, appreciation and courage, and are blocked by beliefs and environmental pressure.

The paradox is that girls who are the "beneficiaries of school success", who, compared to boys, have a more positive attitude towards school and learning, achieve better results in external exams and who pass high school leaving exams and graduate from university more often than boys and men, find themselves, compared to men, in lower-paid, less prestigious and less secure sectors, industries and positions (vertical and horizontal segregation).

4 Kobiety na Politechnikach 2023. Raport, Fundacja Edukacyjna Perspektywy, Ośrodek Przetwarzania Informacji, Warszawa 2023, <http://www.dziewczynynapolitechniki.pl/aktualnosci/264-wciaz-za-malo-kobiet-w-stem>.

A significant decline in the percentage of girls and women in STEM and ICT occurs at three developmental thresholds: during the transition from primary to secondary school, during recruitment to higher education institutions and at the stage of entering the labour market. We know from research that the key choices of further education and career orientation of girls and boys in post-primary and post-secondary school are still largely determined by the dominant beliefs in the environment (parents, teachers, media coverage) regarding "natural" intellectual and emotional predispositions and talents of girls and boys, as well as socio-cultural gender roles: men are perceived as motivated and responsible for providing the material living conditions for the family, and women's traditional role is mainly related to unpaid work at home. Stereotypes are passed on both at home and at schools. For example, the more specialized and subject-segregated the knowledge, the greater the overrepresentation of male characters in textbooks. The most masculinised (80% or more male characters) are textbooks for chemistry, physics, mathematics and computer science, as well as history, philosophy and ethics. Male characters, more often than female characters, are portrayed in professional social roles related to power, prestige and wealth, high education and technology. Women, on the other hand, are represented in professions related to office work and trade and services. Much more often than men, they are shown as people outside the professional world - unemployed, taking care of loved ones, working at home or studying.

Sexism affects and disempowers girls in many ways. Compared to their peers around the world, Polish 11-, 13- and 15-year-old girls are among the most critical of their bodies and the most dissatisfied with their appearance. They struggle with strong pressure regarding their appearance, some of them experience "beauty hate" and "body shaming" (a situation where a person is judged, ridiculed and criticised for the way they look or the way they express themselves). The result is a distorted self-perception, which in turn is associated with low self-esteem, lack of self-confidence, problems in relationships, eating disorders, as well as giving up many forms of activity, dreams and plans. All this permeates and influences their adult lives as well as their level of readiness and courage to take up various challenges. It also shows that girls' support should cover many areas of their lives and everyday living.

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4 Kobiety na Politechnikach 2023. Raport, Fundacja Edukacyjna Perspektywy, Ośrodek Przetwarzania Informacji, Warszawa 2023, <http://www.dziewczynynapolitechniki.pl/aktualnosci/264-wciaz-za-malo-kobiet-w-stem>.

5 I. Chmura-Rutkowska, M. Duda, M. Mazurek, A. Sołtysiak-Łuczak, Gender w podręcznikach. Projekt badawczy. Raport, Warszawa 2016.

6 WHO, Growing up unequal: gender and socioeconomic differences in young people's health and well-being. Health behaviour in school-aged children (HBSC) study: International report from The 2013/2014 survey, Genewa 2014.

How to support girls in developing their interests and increase their self-confidence?

We know from research and observations that adults vary their behaviour and assessments depending on the gender of children. The hidden and often unconscious deprecation of femininity takes many different forms, primarily: differentiation of games and activities based on gender, double standards for assessing appearance and behaviour, sexualisation of girls' bodies, omitting or discouraging girls when choosing important functions and tasks, "silence training" and treating what girls have to say as less important.

Start with yourself. Be a good example. Revise your own beliefs and stereotypes about the relationship between gender and interests and abilities. Intelligence, interests, passions, school subjects and scientific fields have no gender - they are all equally suitable for girls and boys. Don't differentiate between toys, classes, housework, and activities. Don't use double grading standards. Don't convey your own stereotypes and prejudices about what boys and girls are "naturally" like or should be like. **Appreciate the diversity and individuality of each person. Look for balance.** Whenever possible, support equal representation of girls and boys in selections to important functions and tasks - encourage them especially when the stereotype says that boys or girls are "naturally" more suitable or unsuitable for something.

Give girls the opportunity to freely ask questions and share their observations and ideas. Encourage girls to share their observations, doubts, discoveries, ideas, views and knowledge with others. Give them space to come up with their own solutions. Be curious about what they have to say and ask for their opinion.

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7 Zestawienie przygotowane na podstawie autorskich materiałów. Zob. I. Chmura-Rutkowska, 15 nieoczywistych sposobów na wspieranie naukowych zainteresowań dziewczyn, Magazyn "Kosmos dla dziewczynek", <https://kosmosdladziewczynek.pl/portal-wiedzy/ale-temat/15-nieoczywistych-sposobow-na-wspieranie-naukowych-zainteresowan-dziewczyn>; I. Chmura-Rutkowska, 10 sposobów wspierania poczucia wartości i pewności siebie dziewcząt, Plakat, Kulczyk Foundation 2020, <https://kulczykfoundation.org.pl/edukacja/baza-wiedzy/Dlaczego_Rownosc_Plci_Jest_Kluczowa_Kwestia_Dla_Rozwoju_Dziewczat?fbclid=IwAR3sbxN-3Hjjib16mPTX14pOEGgqN4ZuW3UknGrB7bfhJA-KovipVxdXwzL8>.

Talk to girls about their dreams for the future and their professional future. Inspire girls to imagine themselves in a variety of roles and professions. Offer resources that can inform, inspire and entertain girls, while helping them see a future in science. Encourage them to dream and set goals. More and more girls notice that additional career opportunities are opening up to them. Don't use outdated gender myths about who is suitable for what. Encourage breaking patterns.

Free girls from perfectionism. Talk to girls about the fact that they don't have to be perfect - that mistakes and failures are a normal part of learning, finding and testing solutions. Encourage girls to try different activities, even those they don't feel confident in.

Show the practical applications of science and new technologies in life and for changing the world for the better. Show examples of specific solutions that positively impact people's lives.

Study "herstory." Gain knowledge and ensure that your classes recognise the diverse roles and contributions of women to the development of societies at all stages. Complete the narrative about the world's past with heroines, female scientists, inventors, thinkers, activists, experts, and information about women's everyday life and challenges. Make a list of women's inventions and discoveries. Suggest interesting books, films, podcasts, articles and interviews with women about women who pursue scientific and technical passions, especially in fields that are stereotypically considered masculine.

Suggest positive and inspiring female role models. Girls develop their interest in science more intensively when they have an attractive female role model. Look for opportunities to meet women who have achieved success in science and new technologies.

Support girls interested in STEM and ICT. Provide particularly substantive and emotional support to girls when their interests, activities and behaviours do not fit into the traditional, socially expected pattern of femininity.

Help girls with scientific interests get to know each other, integrate and cooperate. There is strength in a group. Girls can motivate, inspire and support one another.

Encourage them to observe nature, experiment and be active outdoors. For many girls, nature and ecology are the beginning of an inspiring adventure with science.

Take advantage of the plethora of informal education. We have a wealth of valuable materials and resources regarding STEM and ICT at our fingertips - they are available online for every girl. Help them look for spaces online where they can expand their knowledge and scientific interests and meet people with similar passions.

Give signals that you believe in them and that they will succeed. Support from an adult from the immediate environment (at school, in the family) and assistance in building and pursuing interests can be crucial for the future of girls, especially those who cannot count on their parents understanding their interests. Use your example and experience - share proven ways to deal with difficulties and failures. Show that motivation, work and perseverance are more important than talent.

Don't focus on girls' appearance. Focus your attention on intellect, creativity and skills. Don't comment on the girls' appearance - it has nothing to do with their academic competence. Treat what girls and boys have to say as equally important. Don't ignore girls' perspective and voice just because they are wearing nail polish and have sequins on their top.
Use equal language. We say what we think. We mean what we say. The Polish language is changing, and girls and women constitute half of humanity.

Disarm stereotypical sexist beliefs and prejudices. All of this poisons everyday life and relationships, it negatively affects the intellectual, emotional, social and physical development of girls and boys. Talk about the harmfulness of stereotypes and gender biases. Offer wise, critical reflection on experienced and observed gender-related inequalities and injustices in all areas of everyday life and in various areas of social life: family, professional, politics, science. Show the real benefits of equal treatment.

Respond to sexism. Respond to language of contempt that discredits the intellectual and academic capabilities of girls and women. Pay attention to sexism in everyday language – labels, comments, judgments, jokes. This is one of the most common forms of taking away girls' self-confidence.

Iwona Chmura-Rutkowska

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Collaborator of state and local government institutions and non-governmental organisations working for equal rights. Member of the Team for the Equality and Diversity Policy of the City of Poznań and the Steering Team of the Educational Policy for the City of Poznań 2030. Vice-President of the Women's History Museum Foundation, chairwoman of the board of the Ja, Nauczyciel'ka Foundation.

Author and co-author of scientific publications, as well as popular science articles, educational and training materials and workshops for children, teenagers and adults.

Cosmos and Raspberry