



THE EXHIBITION OF SCIENCE BEHIND CHILDREN TALES



Science is everywhere. But, can we also find it hidden amidst the fantastic world of fairytales? Maybe inside the Haunted Castle or in the Never Ending Forest, inside the Chocolate House, in the Magic Mirror or possibly in the beanstalk?

ONCE UPON A TIME... science for story lovers is an exhibition exploring phenomena from Physics, Chemistry, Mathematics, Geology and Biology as well as social sciences and other fields of expertise. In this bewitching exhibition, Pinocchio, Red Riding Hood, the Big Bad Wolf or the Forty Thieves jump right out of the books to tell us all about science behind children's tales.

With more than 30 interactive exhibits, this is an exhibition destined for children, adults and all those who have read, told or dreamt about children's tales.

The children's tales



Ali Baba and the 40 Thieves
 Alice in wonderland
 Cinderella
 Hansel and Gretel
 Little Red Riding Hood
 Jack and the beanstalk
 Snow White and the 7 dwarfs
 The adventures of Pinocchio
 The Frog and the Ox
 The Stork and the Fox
 The Wolf and his shadow
 The Princess and the Pea
 Three Little Pigs



"Mirror, mirror on the wall, who is the fairest of them all?"

Snow White's Evil Queen



10 children's book stories

Enchanted forest

Witch's laboratory

Alice in wonderland

Manipulate a disobedient Pinocchio, enter a crazy chocolate factory, lie down in the bed of the Big Not-so-bad-after-all Wolf and much, much more...

Discover the science behind fables hidden in the trees of this labyrinthine Forest. In this magical place you can smell the forest, feel the textures of tree trunks and see the tops of trees changing colours.

Be the good or the bad witch in this laboratory and put the right magic potion in the cauldron to discover the powers of fungus, bacteria or leeches. MUAHA HA HA HA!!!

On this table set for tea everything is possible. Embark on a dream filled with hands-on activities where the imagination is the limit.



CINDERELLA

"The night when all the sisters leave to go to the palace ball, Cinderella is left alone to sweep the terrace. The fairy transforms her into a princess and sends her to the ball to dance with very uncomfortable crystal shoes with which she can barely walk."



CUT AND STICHING

Her three sisters' dresses are made in the sewing shop. If the largest sister is twice as big as Cinderella, will we need twice the fabric? Find out that the area and volume of a cube does not increase proportionately.



GLASS SLIPPER

Which of these slippers is really made of crystal? But beware; things are often not what they appear to be...

THE ADVENTURES OF PINOCCHIO

"Geppetto made a puppet he called Pinocchio with a magic piece of wood. Right after he finished making his feet, Pinocchio started walking and left. This is how Pinocchio's life begun, doomed not to lie because his nose grows every time he lies."



CRAZY PUPPET

This Pinocchio is impossible to control... when we lift his arm he stretches his leg and when we lift his leg he stretches his arm. Pinocchio is like human brain: when we learn something new, new circuits are established to reinforce with practice and repetition.



THE FIBBING CAMERA

Don't believe everything you hear or what you see. Being sceptical is good.

THREE LITTLE PIGS

"The Wolf walked slowly around the stone house. And he observed, as did the pigs, that the house was strong and resistant. And sat down and waited. The pigs were trapped. They had no way of escaping."



ALL TYPES OF HOUSES

Is brick stronger than wood and wood stronger than straw, as the story tells us? Not always! The resistance of a house depends not only on the material used, but also in the construction technique. To prove it let's see if the house falls down when the wolf blows.

LITTLE RED RIDING HOOD

"Little Red Riding Hood asks her granny why her eyes look like black plums; why her ears are as hairy as her slippers and why her nose is so large and moist, and when she asks the last question, all is revealed. Her granny is ugly but not that ugly, this is not her granny."



BIG BAD WOLF

Granny speaks of the forest, of how she can smell animals and hear the buzz of a mosquito at a distance. It can't be granny. But it also doesn't look like the bad wolf!



RED ALERT

Why do we associate red with danger?



HOW WOLVES SEE COLOURS

I wonder if the wolf knew what colour Little Red Riding Hood was wearing.

HANSEL AND GRETEL

"The house was made of candy and the kids nearly ate it all. With so much sugar and saturated fats, the two siblings were bouncing off the walls. The owner of the house tried to stop them but she failed and had a sad ending, was pushed into the oven."



ON THE TIP OF YOUR TONGUE

How many flavours can our tongue detect?
Only five: sweet, bitter, sour, salty and umami.
It doesn't seem like much. The Bowlingua game shows why we are particularly sensitive to these five tastes.



CHOCOLATE FACTORY

Where does cocoa come from and why is chocolate so addictive?



ALI BABA AND THE 40 THIEVES

"Open sesame! This was the password used to enter the cave of the 40 thieves. What good is a password if everyone knows it? Did the bandit chief know that passwords should be changed regularly?"



OPEN SESAME

You can try your luck in this slot machine! You have two attempts to form the word SESAME. Take a chance and you may win a treasure... A small change can result in a huge number of possibilities.



TREASURE CHEST

It may not seem like it, but this chest has several hidden treasures. After all, not everything that glitters is "gold".

THE PRINCESS AND THE PEA

"The young princess was offered a room and a bed. But the astute and suspicious queen tested the newcomer to see if she truly was a real princess. She hid a pea under twenty mattresses and eiderdowns. She was asked to sleep in this poorly done bed. Poor girl."



CONTEST FOR SENSITIVE PEOPLE

Being able to detect a pea is perhaps an exaggeration, but our sense of touch can be improved. Test your tactile sensitivity, building the puzzles hidden in the mattresses.



MATTRESS DWELLERS

You never sleep alone ... Here you can take a look at your unwanted sleeping companions.

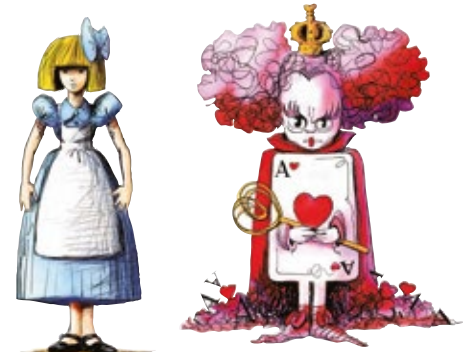


A PEA IN THE MUSEUM

It's so precious that you can see it but you can't touch it! The value of things lies in the eyes of those who see them.

ALICE IN WONDERLAND

"If a talkative rabbit runs by you, with a clock and dressed as a Lord, don't hesitate and run after him. If you reach a door that prevents you from entering an enchanted garden, ask yourself how big you should be to cross the doors of imagination."



GROWING AND SHRINKING

We all know that we cannot suddenly stretch and shrink like Alice. However, the people who walk in this room seem to change size from one moment to the next. Let's find out what's happening?



TICK-TOCK

Some phenomena take thousands of years to occur whilst others just fractions of a second. What if we could control time to see it better?

SNOW WHITE AND THE 7 DWARFS

"When Snow White was born she was rosy, but then turned white, due to the fear she had of her stepmother. When her stepmother heard that the girl had run away, she consulted her silver mirror and it told her that the white girl now lived in the Black Forest with seven coloured dwarfs."



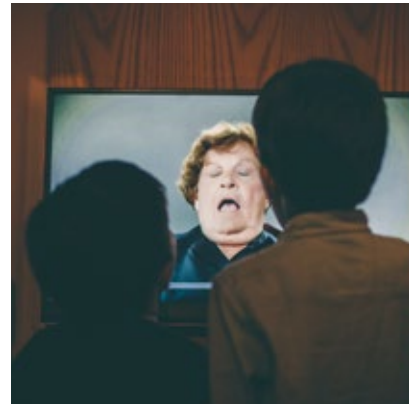
MIRROR, MIRROR

Facial symmetry is an important factor in our perception of beauty, but to what extent? In this mirror you can see your face as it is, and how it would look if it were perfectly symmetrical.



GRUMPY AND HAPPY

Detecting emotions is so important to us, that we can see them even when they don't exist.



SLEEPY

Is yawning contagious?



JACK AND THE BEANSTALK

"Jack and his mother had a cow. Jack traded his cow for a handful of beans. His mother threw them out of the window and in the morning, a giant plant had risen up to heaven. On the top, there was a rich giant who became enraged when Jack stole his riches..."



GIANT FOOTPRINT

Did you know that when you eat a steak you are consuming thousands of litres of water? Discover the water footprint associated with various everyday products and see the extent of a giant's ecological footprint.



BEANSTALK VEGETABLE PATCH

Did you know that there are more varieties of beans than those found in supermarkets?

ENCHANTED FOREST

The enchanted forest is the central space of the exhibition. The tops of trees change colour, simulating the seasons and you can feel the smells of the forest and the textures of tree trunks. Here you can listen to the stories of the Forest and discover the scientific moral of the six fables hidden in the trees.



THE STORK AND THE FOX

The stork agrees to have dinner with the Fox, but this time she is alert. She takes all types of beaks with her in her toolbox such as: long, short, thick, thin, folded, shaped like a spoon beaks... Can you guess which is the best beak for each menu?



THE WOLF AND HIS SHADOW

Try to make some shadows. Don't be afraid and let your imagination run wild!



THE FROG AND THE OX

A frog noticed an ox in the meadow and wanted to be bigger than him. Press the button and notice how the frog swells. It doesn't come to burst, leave for the next one to try.

WITCH'S LABORATORY

The substances are neither good nor bad. It all depends on how we use them.



ALICE IN WONDERLAND



ALICE'S TABLE

Sit down. Whether you shrink your legs or stretch your feet, the important is to let yourself be enchanted by this table from Wonderland!



"Then I'll huff and I'll puff and I'll blow your house in" Angry Wolf

Technical details

Exhibits: **33**

Languages: **Trilingual**

Space required: **450 m² to 650 m²**

Set up: **12 days**

Take down: **10 days**

Minimum room height: **4.10 m**

Transport details: **4 lorries (13,5 m wide and 2,75 m height) or 5 containers**

Accessibility: **This exhibition is also accessible to people with special needs**

Contacts

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www.pavconhecimento.pt/travellingexhibitions