



China Institute of
Water Resources and
Hydropower Research



United Nations
Educational, Scientific and
Cultural Organization



Intergovernmental
Hydrological
Programme

WATER EDUCATION FOR KIDS

AGE 3-7

Chief Science Author : WANG Hao

Chief Author : MENG Yuan



 科学普及出版社
POPULAR SCIENCE PRESS

WATER EDUCATION FOR KIDS (AGE 3-7)

Chief Science Author : WANG Hao

Chief Author : MENG Yuan

科学普及出版社
· 北 京 ·

A joint publication program sponsored by:

China Institute of Water Resources and Hydropower Research & UNESCO Intergovernmental Hydrological Programme



China Institute of
Water Resources and
Hydropower Research



United Nations
Educational, Scientific and
Cultural Organization



Intergovernmental
Hydrological
Programme

Chief Science Author WANG Hao

Chief Author MENG Yuan

Copyright holder China Institute of Water Resources and Hydropower Research

Address A-1 Fuxing Road, Haidian district, 100038, Beijing, China

Website www.iwhr.com

Publishing Director QIN Deji

Project Editor DENG Wen

Editors DENG Wen, Guo Jia

Copyright Editor CHEN Lu

Cover Design ZHU Ying

Typesetting Jin Cai Heng Tong

Publisher Popular Science Press

Issuer Distribution Department of China Science and Technology Press Co., Ltd.

Address 16 South Zhongguancun Street, Haidian District, Beijing, China,

Postal code 100081

Issue telephone 010-62173865

Fax 010-62173081

Website <http://www.cspbooks.com.cn>

Edition 2021, April 1, First Edition

ISBN 978-7-900282-87-3

Price 8.00 RMB

Lead Translator:

MENG Yuan

Chief of Science:

WANG Hao

Translators:

GUO Chongshan

LI Tong

LIU Yifan

LI Wenyang

Foreword

Water, the source of life, connects and shapes the natural environment and various ecosystems of the Earth's surface. Water also underpins human civilization. As the world population continues to grow, water has become a strategic resource empowering and sustaining socio-economic development across the world.

With only 5% of the world's renewable water resources and 9% of the arable land, China has made painstaking efforts to feed its people, who account for 19% of the world's total and fuel its economy. Nonetheless, challenges remain as China endeavors to feed its increasing population and sustain socio-economic growth without stressing out its water endowment. The eyes are on China.

China's water reality is defined by relative water scarcity in contrast to the huge population and low water efficiency. China gains significantly less from its every cubic meter of water use than the developed countries. Pollution further threatens to throw water supply and demand off balance. Therefore, it's imperative that China transform to a water-wise and environment-friendly society, the core of which is higher water use efficiency. It is also part of a wider endeavor to protect and preserve the nation's resources and environment, and to achieve a more sustainable future. As international experiences showcase, increasing water efficiency is nothing less than a revolution that requires actions inside and out the social fabric.

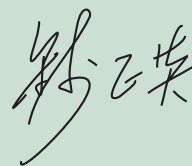
Shaping the public minds on smart water use is a fundamental step toward a water-wise and environment-friendly society. For this purpose, it is necessary to launch a wide array of campaigns and outreach initiatives, amongst which is public water education.

Aside from communicating knowledge, water education aims to raise public awareness and enable actions of knowing, loving, saving and protecting water. It also contributes to greater harmony with nature.

That's why I'm proud to introduce the *Water Education* series. It is a cherished brainchild of numerous water professionals, educators, and committed team staff. It is crafted with a language easily understandable, and with fascinating knowledge in sharp focus. It is a daring effort for China to advance water education and a fresh contribution to the sustainable development goals from a water perspective.

Congratulations! Keep up the good work!

HE Madam QIAN Zhengying

A handwritten signature in black ink, consisting of stylized Chinese characters. The characters appear to be '钱正英' (Qian Zhengying).

Vice Chairperson of the 7-9th Chinese People's Political Consultative Conference

National Committees

Former Minister of Water Resources, the People's Republic of China

Academician, Chinese Academy of Engineering

Foreword

The United Nations Sustainable Development Goals (SDGs) 6 aims to ensure availability and sustainable management of water and sanitation for all. Water plays a key enabling role in the sustainable development of human and society and therefore is a connector to all SDGs. Environmental health, food security, human settlements, socio-economic development, human wellbeing are all water-dependent. Given its implications for development, water adds additional severe challenges to less developed countries, and especially their vulnerable inhabitants.

Africa has the fastest growing population in the world, which is estimated to double from 1.1 billion in 2019 to nearly 2.4 billion in 2050. The increasing population brings competing demand for water resources and accelerates the degradation of water quality across the continent. Sub-Sahara is facing even greater challenges with more than half of the world's extremely poor people living in this region, and deep poverty constrains their response to water issues. Most importantly, Sub-Saharan Africa has the largest number of water-stressed countries of any region, and more than 300 of the 800 million residents live in a water-scarce environment.

The rising population also consequently brings a high youth dependency rate. Many years of UNESCO working experiences have proved that younger generation is the best starting point for transformation, as they might change behaviors of the family potentially thus making a difference to the society. The youth as agent of change and carriers of hydrological knowledge will contribute to water situation improvement, and finally be beneficiaries of sustainable water resources. In this way, more Africans will be concerned and be involved in the conservation and management of water as a valuable natural asset and will think about how to use water in an efficient, equitable

and sustainable way. Therefore, it is essential to invest in and build the capacity of a future generation that will ensure the sustainability of Africa's water sector.

In this publication, a series of comprehensive water knowledge is presented to different age students through vivid cartoons, interesting riddles, funny games, and remarkable stories to elaborate the relationship between water and human life in all aspects. We are confident that this would be an excellent cartoon-water-family-based extracurricular reading material which encourages the students to apply the knowledge into daily life to solve the common challenges. We hope that this book will guide the youth to know, love, save and protect water for an equitable and sustainable use. We expect that this work will contribute to improve the water culture and lead to a future where the potential of water resources is fully reached, with the region's socio-economic development in a sustained growth.

I would like to express my immense gratitude to the authors and the translation team in China Institute of Water Resources and Hydropower Research who have made valuable contribution to this publication. Special gratitude goes to the partners and UNESCO colleagues for their illustrious work on this. Let's continue to walk the journey together towards a sustainable world.

Ms. Shamila Nair-Bedouelle
Assistant Director General for Natural Sciences
UNESCO

Foreword

Water supports life, fuels production, and underpins the ecosystems. Among all kinds of resources, water takes on a central and irreplaceable role in human well-being. As three critical challenges feature prominently on current and future landscapes, i.e., resources, population, and environment, we can never emphasize water's significance too much.

From the agrarian age thousands of years ago to the modernized era, water makes possible better life, a better environment, and a better society. Stories, legends, and myths about people and water adorn history, and numerous water heritages from the past benefit us today. Water has been and will continue to be a core cause for generations upon generations who aspire for constant improvement of all life on earth.

The Sustainable Development Agenda of the United Nations lists water as an individual goal for the first time, aiming to ensure clean water and sanitation for all. Many other goals like Zero Hunger, Affordable and Clean Energy, Life on Land, Climate Action, and Sustainable Cities and Communities have water as a critical linchpin. Society must take action to raise public awareness of water protection with a sense of urgency.

The *Water Education* Chinese series answers to this urgent cause. They are crafted through six years by an A-list team: Chief Editor Prof. WANG Hao is an Academician of the Chinese Academy of Engineering and Honorary Director of China Institute of Water Resources and Hydropower Research (IWHR). The editors are public-spirited water professionals of IWHR who worked with like-minded and wholehearted science educators in Beijing.

The English version is both a revival and a refinement of the Chinese original. It strives to retain the “flavor” and spice it up a little bit: substituting and adding in individual sections splashy wonders and facts from Africa, Americas, and Europe, hoping to deliver warm surprises to readers outside China.

The series caters to the young minds at three age stages, building up the knowledge tree incrementally. They draw the readers closer to the serious sciences behind water, cultivate their scientific literacy, and activate the passion and love for water from the young's hearts. Hopefully, the series will inspire young readers to be more aware of water protection and be more proactive in safeguarding water.

IWHR is a national non-profit water research institute that aims to “work on water to better the future.” Delivering science to society and the public is at our heart. We are glad to collaborate with the UNESCO Regional Office for East Africa to adapt, publish, and disseminate these beautiful books. We cannot wait to introduce them to young readers eager to learn more about water in countries and regions with similar water challenges.

The highest goodness is like water. Inclusiveness creates beauty in diversity and harmony. We hope the *Water Education* English series can serve as a bridge across different cultures and empower worldwide collaboration for “better water, better future.”

KUANG Shangfu



President

China Institute of Water Resources and Hydropower Research (IWHR)

August 2020

Preface

A decade into its publication, the *Water Education* Chinese series remains the most complete and focused extracurricular readings on water education in China. With water as the sole focus, it constructs a fascinating world of facts, figures, anecdotes, experiments, poems, and games. As water-related challenges escalate fast into top concerns worldwide, we believe bringing the series to more languages and cultures can engage the youth as widely as possible.

The English series team started work in May 2020 and completed all three volumes after ten months of devotion, passion, and intense work. We thoroughly investigated international best practices before setting to work and learned a great deal from accomplished water agencies from the US, UK, Japan, Sweden, and Singapore.

We want to protect the precious curiosity, power of imagination, and thirst for fun. That's why we translate and even design loads of jingles, rhymes, poems, and splashy water word games. We want the English series to be international in every sense. That's why we select indigenous water projects like Dujiangyan Water Diversion Project and the Iranian Qanat Groundwater systems. We also invite readers to roam around the world: the magnificent Danube Delta in Europe, the prosperous Suez Canal in Egypt, and the iconic Hoover dam in the US. The readers can also challenge themselves to resolve real-life issues through science experiments, field trips, mock hearing, and public advocacy.

The English series is a collective output from the rounds of research, cross-checking, and proofreading by the translators/writers and careful review by UNESCO colleagues, the original Chinese editors, and editors from the White Star, Italy. Nonetheless, we are humbled to acknowledge that there is no such thing as perfection in writing and translating, and there must be some shortcomings we unwittingly ignore during the short ten months of work.

We earnestly hope that the readers may accept its imperfections and find the English series fun and warm. When the youth learns how to love, respect, and protect water, a water-wise society for all will be on the horizon.

Water Education English series team

December 2020

Acknowledgement

Our gratitude goes to our devoted colleagues in UNESCO Office in Nairobi first. They are: Jayakumar RAMASAMY, who suggested an English version in the first place, and Giuseppe ARDUINO, Samuel PARTEY, Jorge ELLIS, Nicole WEBLEY, Anne LILANDE, and in particular, LI Xinhong, who has been an excellent matchmaker between the two sides.

We also would like to acknowledge contribution from International Association for Hydro-Environment Engineering and Research (IAHR) China Chapter, Global Water Partnership China (GWP China), and the Chinese National Committee for Irrigation and Drainage (CNCID).

Chinese original editors

Editor-in-Chief: WANG Hao

Deputy Editors: GAN Hong, ZHANG Haitao

Advisers: CHEN Chuanyou, XIE Senchuan, HE Weicheng

Editors: (by character strokes of the Chinese surname)

WANG Hao,	WANG Lin,	WANG Guoxin,	GAN Hong,	LIU Ke,
LIU Ping,	LIU Bin,	LIU Yongpan,	YAN Denghua,	WU Nongdi,
ZHANG Haitao,	ZHANG Hongxing,	LI Ge,	LI Gang,	LI Baoguo,
LI Xueping,	DU Mei,	GU Liya,	ZHOU Youhong,	LUO Lin,
HAO Zhao,	JIA Yangwen,	JIA Shaofeng,	GAO Jing,	PENG Xi,
YOU Jinjun,	GUAN Enhong,	ZHAI Liyuan,	TAN Xuming,	M. Nicolo,

Jayakumar RAMASAMY

Writers: ZHOU Youhong, LI Gang, YAN Yingying, ZHANG Haitao,

MA Lan, YAO Feng, DU Wenli, CHU Wenli

Illustration: HE Jin

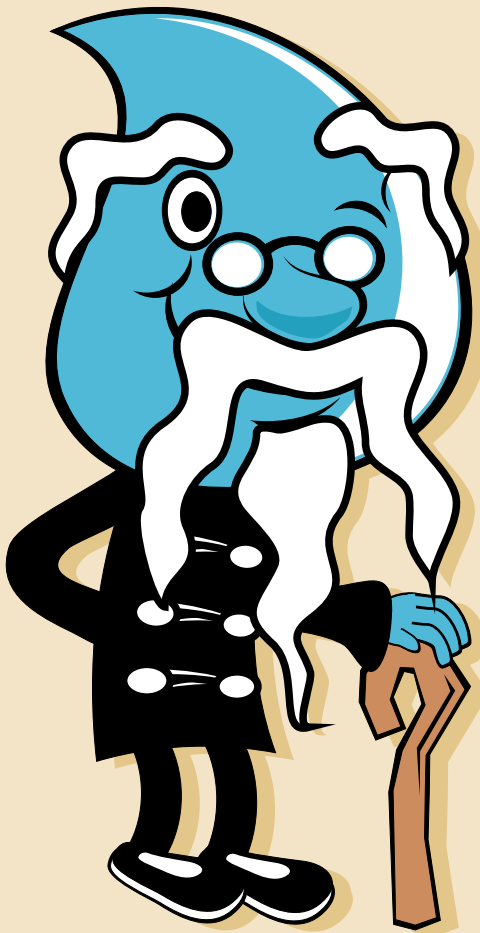
Typography: HE Jin, JI Yuan



**Droplet
Drake**



**Mr.
Droplet**



**Grandpa
Droplet**



**Mrs.
Droplet**



**Droplet
Daisy**

Contents



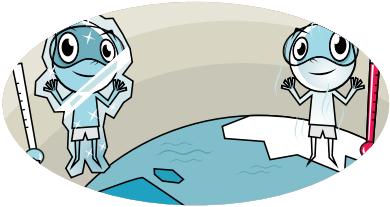
Chapter One: Lovely Water Droplets

1



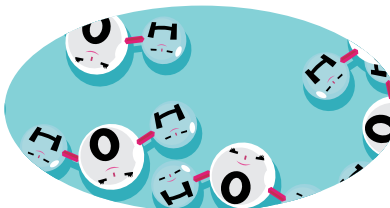
Chapter Two: Water All Around Us

11



Chapter Three: Playful Water

23

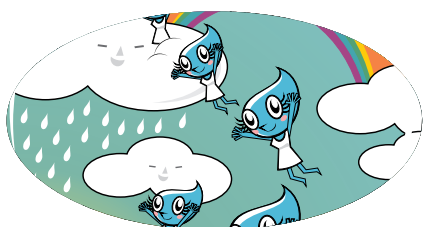


Chapter Four: Mysterious Water

32



Chapter Five:
**Come and Play,
Hide and Seek!** 45



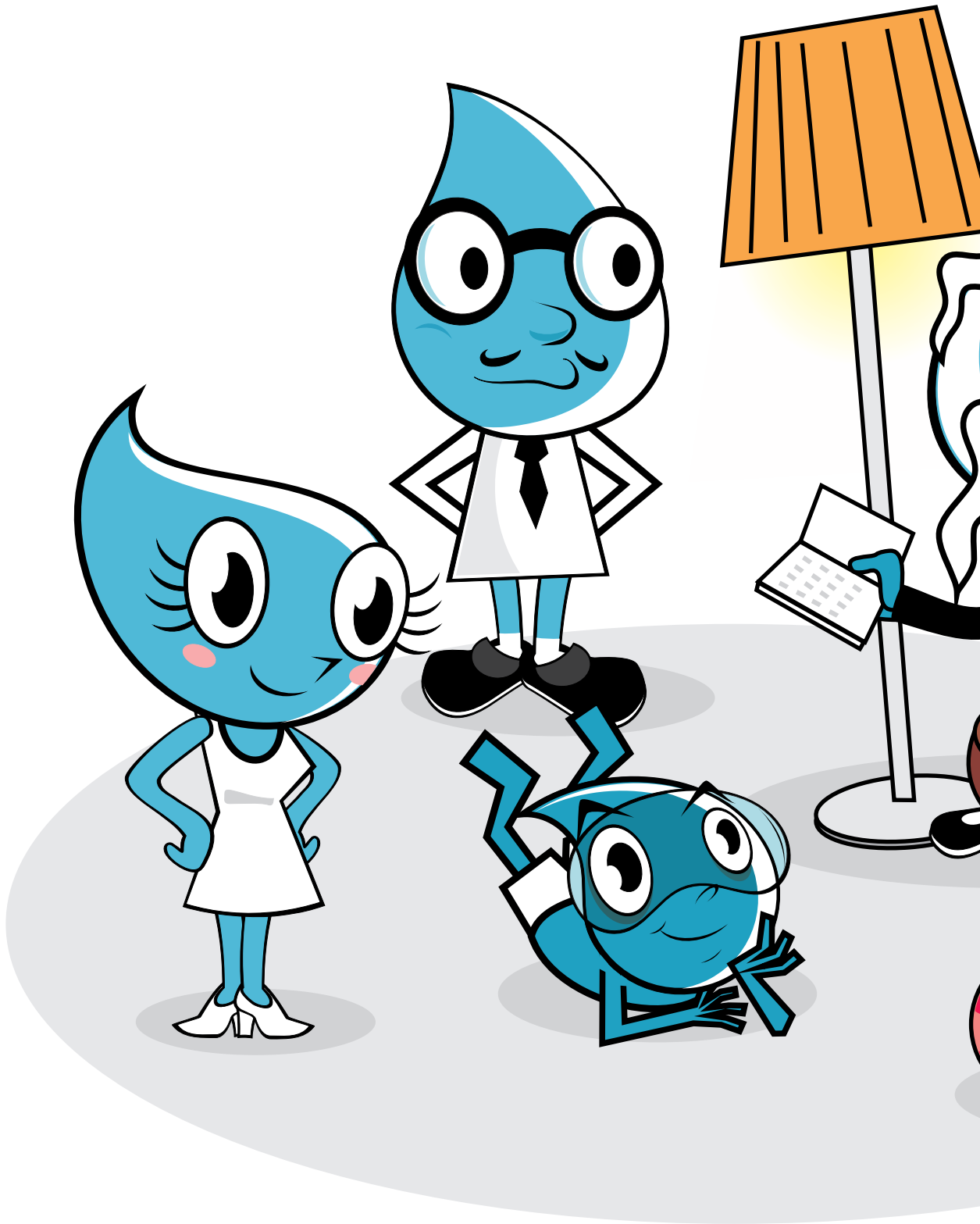
Chapter Six:
**The Wonderful
Water Cycle** 55

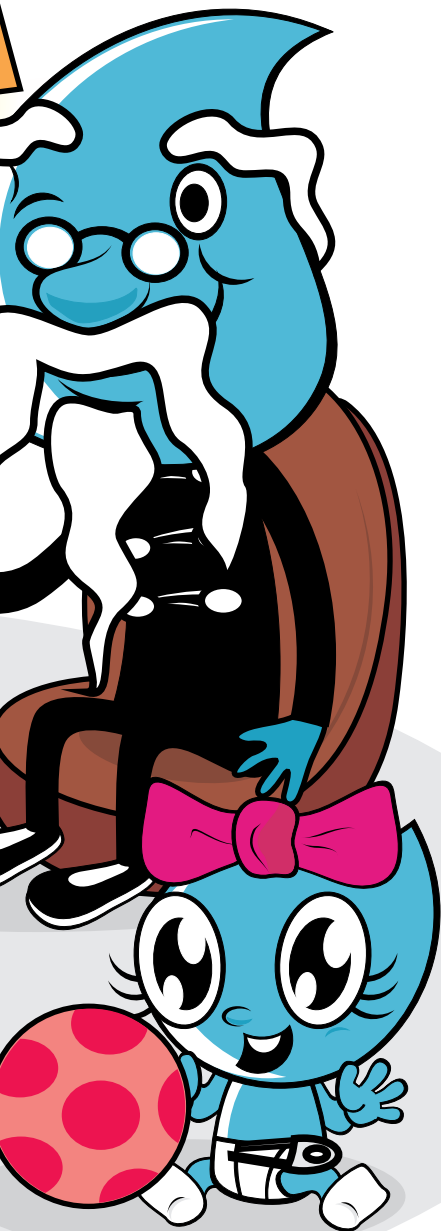


Chapter Seven:
**We can't do
Without You!** 67



Chapter Eight:
Have Fun with Me! 79





Chapter One: Lovely Water Droplets

**Story
Time**

Who am I?

**Game
Zone**

I disappear
before your
very eyes!

**Love to
Rhyme**

Abacadabra!

**Brain
Workout**

I can be a
magnifier!

Who am I?



“You are a huge piece of glass, ” said the Sun,
“Breaking my light into rainbow colors of seven.”

“You took my makeup mirror, ” murmured the Moon,
“Shining yourself brighter than a sleek silver spoon.”

“You are the hair of a fairy, ” announced the grass,
“With the wind you prance and dance and always stay fresh.”

“You offer me playground, ” quacked a duck,
“I dash and splash with buddies in flock.”

“You are my friend, ” chirped a girl,
“The fun playing with you is real.”

I giggled and chuckled,
“We are happy water droplets, all around you yet you may not know!
We shine like a crown in the sun,
We shimmer like a mirror under the moon.
The grass grows wherever we go,
The ducks follow wherever we flow!”

I disappear before your very eyes!

Hi kids, are you ready for some fun? Let's play a game!



Materials:

A dropper (or a bottle cap)

Directions:

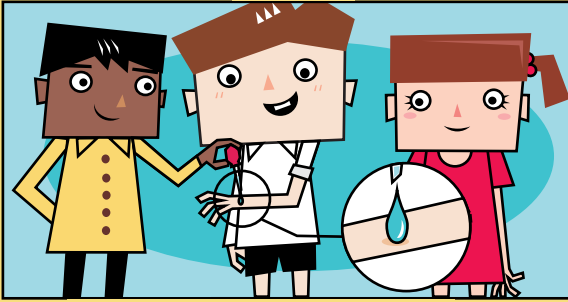
1. Use the dropper to release a drop (or drops) of water on your arm.
2. Gently move your arms to send the water drop from one arm to the other. Well? Can you make it?

Try a team play this time! Let's see which team (five kids or more) accomplish the following journey the quickest!

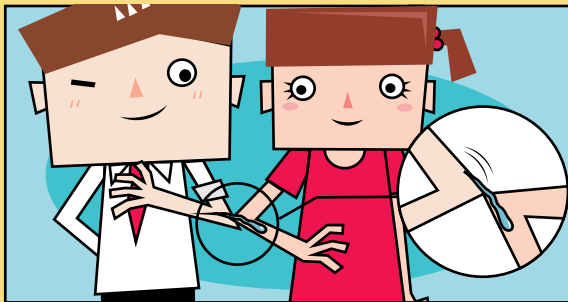


Here we go!

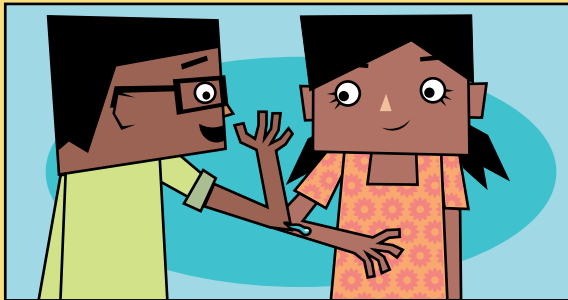
Players of a team stand in a row, and lay bare their arms;



Release a drop (or drops) of water onto an arm of the first player;



The first player carefully moves his/her arm so that the water drop is transferred onto the arm of the second player;



Continue passing on the drop until it lands on the arm of the last player.



Observe how much of the water drop remains.

Phew, what a journey!

Abracadabra!

A little water droplet may I just be, I do magic tricks once you count to three!

Whoosh! I am a snowflake drifting and falling onto a snowman's head.

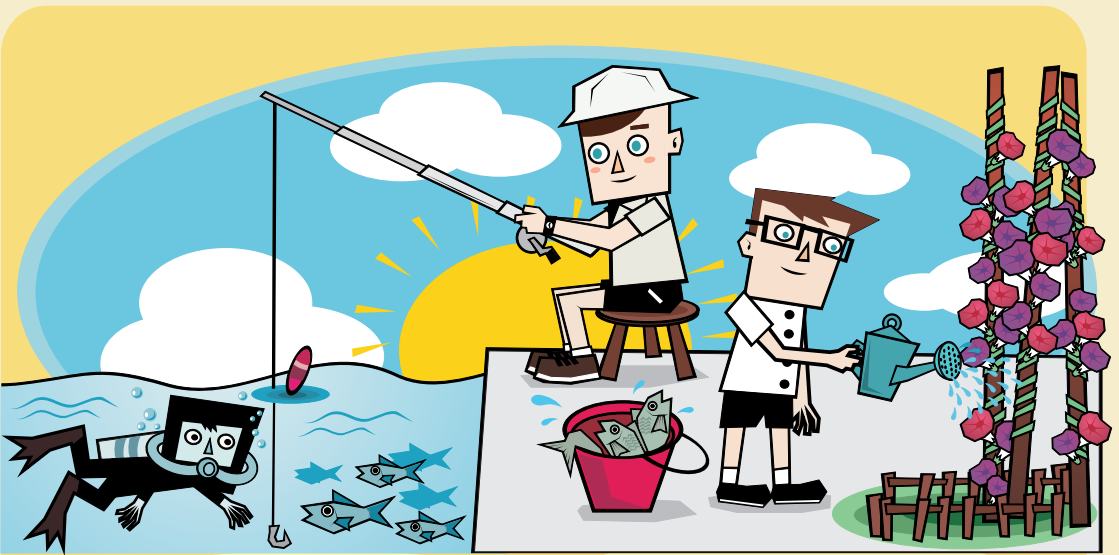
Whoosh! I am a dark cloud flying over the moon and playing peekaboo!

Whoosh! I freeze into hoar frost.

Whoosh! I gush in dazzling fountains.

Whoosh! I splash on crystal waves and jump to the sea.





THINK: When and where do you use water?

When you go fishing? Go swimming? Or water your flowers?

I CAN DRAW



Draw a picture that has something to do with water!

I can be a MAGNIFIER!



Have you ever used a magnifier to observe a tiny object?
Do you know how it works?

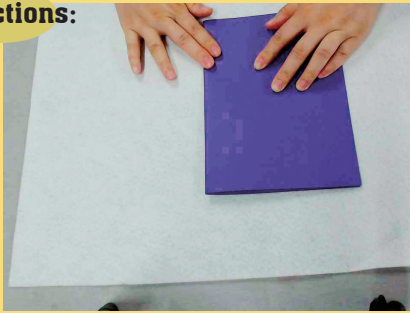


Hey kids! I bet you all want a magnifier of your own! It is easy peasy to make a home version, with a water droplet! Try it out and you'll see!

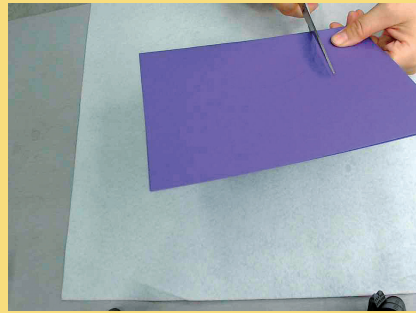
Materials:

A piece of transparent PVC plate or plastic mat, a sheet of cardstock paper, a dropper, a cup of water, a roll of double-sided tape, and a book.

Directions:



1. Fold the cardstock paper in half.



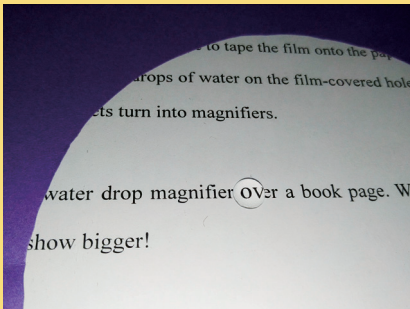
2. Cut a hole in the middle of the folded paper.



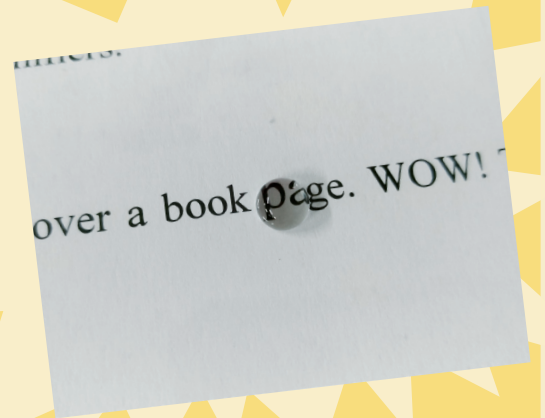
3. Apply some double-sided tape onto the paper.



4. Place the PVC plate on the unfolded paper.



5. Release several drops of water on the plate-covered hole. That's it! The water droplets turn into magnifiers.



Place the water drop magnifier over a book page. **WOW!** The letters on the page show bigger!



Aha... Do I make a decent magnifier or what? We water drops, upon falling on a thin film, become magnifiers with thick centrals and thin rims. Place us over a book, and you see letters in a bigger size!





Chapter Two: **Water All Around Us**

**Story
Time**

**A blue blue
planet**

**Game
Zone**

**The earth is a
planet of ...**

**Brain
Workout**

**Can we grow
plants in
seawater?**

**Discovery
Channel**

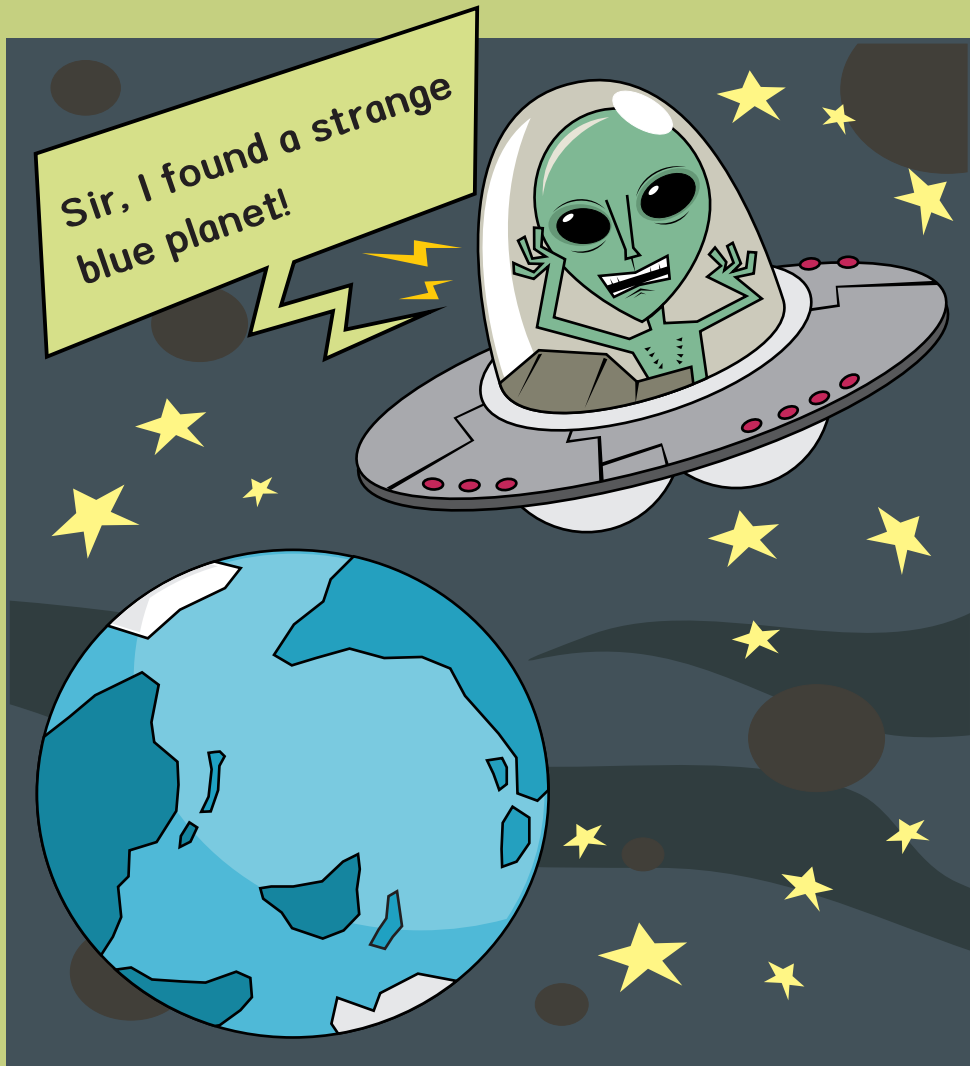
**Precious
freshwater**

Story Time

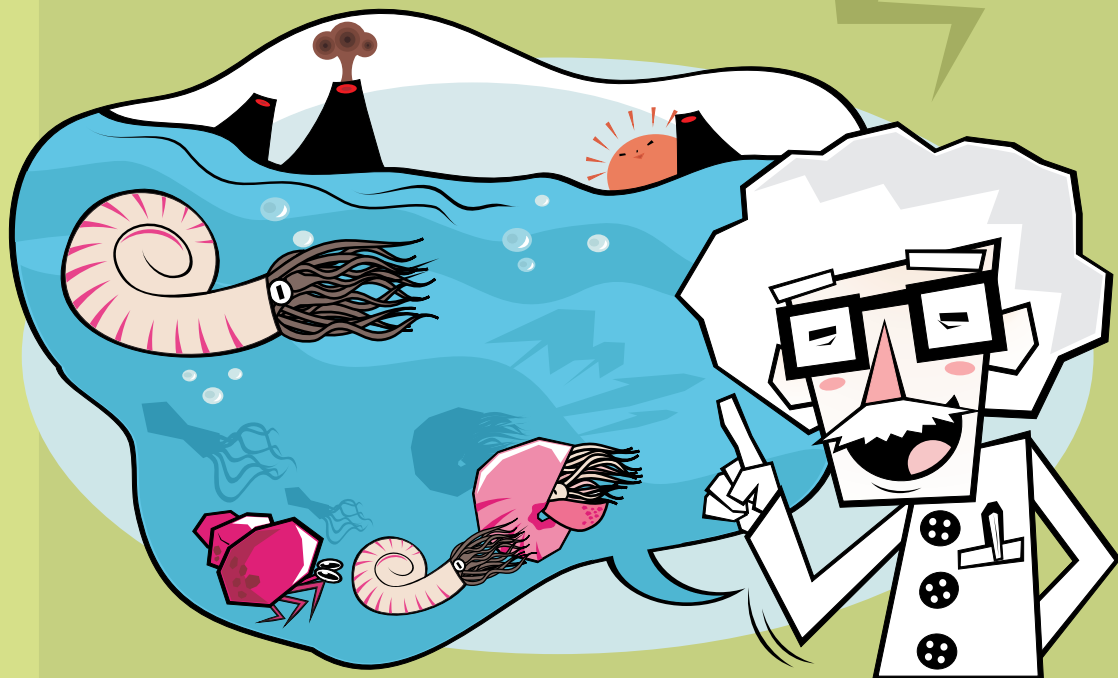
A blue blue planet

An early space traveler swept past the earth and observed it from afar. Later he noted in his travel logs, "A strange planet...seems to comprise purely of water. A detailed up-close observation upon return is advisable."

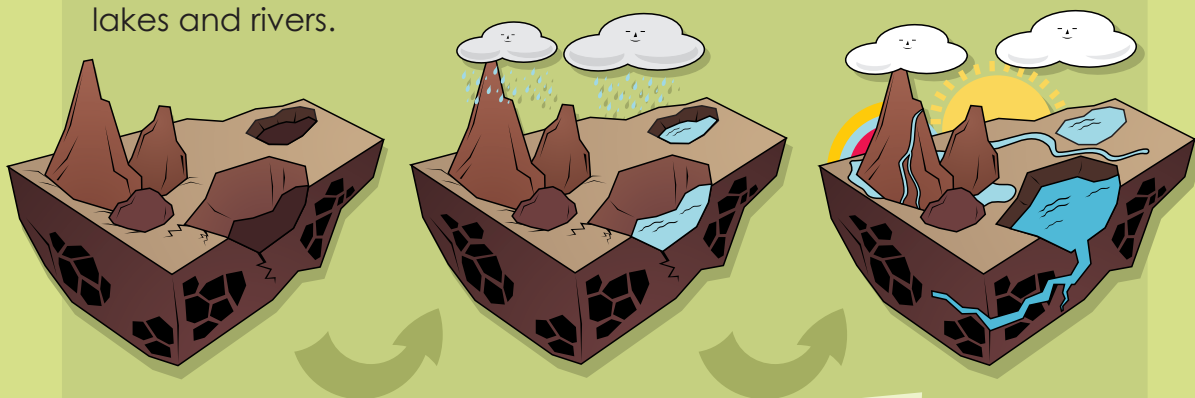
It is not rare to find traces of water on one planet in the star-studded universe. However, with water occupying 71% of the planet's surface and boasting 1.4 billion cubic kilometers in total volume, the earth can only be described as a MIRACLE.



Scientists tell us that it takes billions of years for planet Earth to form. Along the process, expanses of water are formed, which we call "oceans".



The earth evolves constantly: Some places rise and form plateaus and mountains, while some places sink and become lowlands and valleys. When the rain falls to the ground, some lowlands and valleys hold up so much water that they consequently become lakes and rivers.



Spot the Difference: Can you find the differences in the three pictures above? Any idea how the differences are formed?



The earth is a planet of ...

Hey kids! Ready for some fun? Raise your hands, and get ready to catch our planet "earth"!



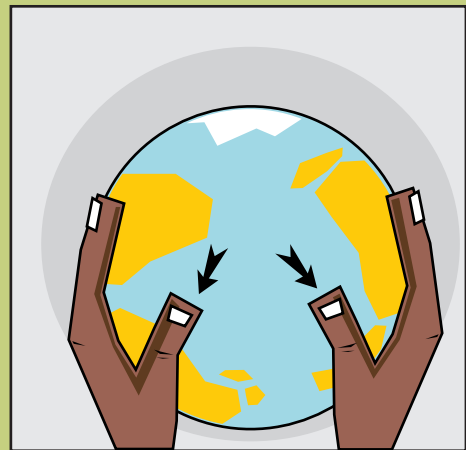
Blow up a balloon and draw a world map on it. Use the color **yellow** for lands, and **blue** for oceans.



One kid throws the balloon up in the air, and another kid tries to catch it with his/her hands. CHECK🔍: Where do your thumbs touch on the globe when you catch it? Land or ocean?



Ask each one of the class to catch the balloon once. Then divide the kids into one group whose thumbs touch lands and another group whose thumbs touch oceans. Do a headcount.



DISCUSS🗣️: What can we tell from the two groups' headcounts? Oceans vs lands, which ones are larger on our planet earth?



Imagine splitting the earth's surface area into ten equal portions, then water will take up seven portions, and leave the land with only three!

So a planet of *aqua*, rather than of *erthe* (the medieval word for earth), would be a more truthful name for our planet!



Water exists not only on various surfaces of the earth—oceans, rivers, glaciers, lakes, and wetlands, it also hides under the ground. Vast amounts of water also are held up in the clouds and the air. Water is inside all the animals and plants.

We are literally surrounded by water...

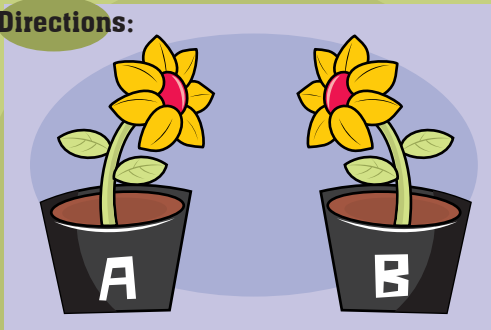
Can we grow plants in seawater?

Hi kids, GUESS (??): What will happen to plants if we water them with seawater? Let's find it out with a little experiment!

Materials:

Two same pots of a common plant, simulated "seawater" (35 grams of salt per 1,000 grams of freshwater), watering cans, and freshwater.

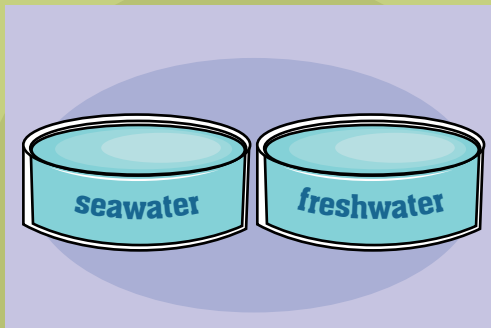
Directions:



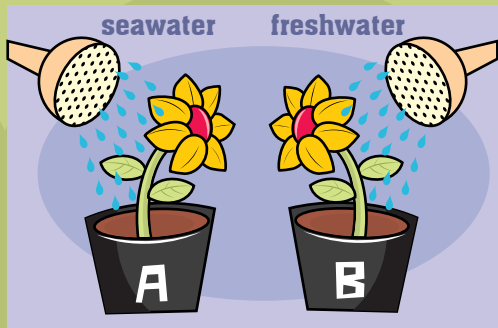
Two same pots of plants



Prepare the salty water with a similar salinity as seawater.



Prepare the same amounts of "seawater" and freshwater



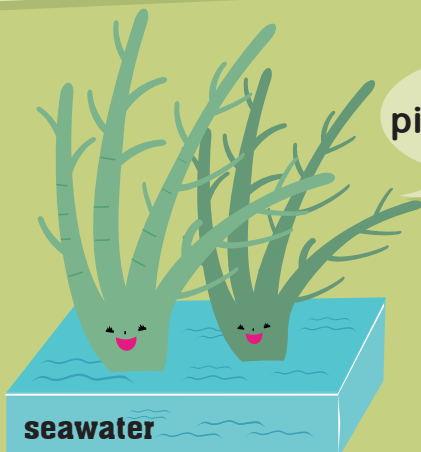
Water the two plants with "seawater" and freshwater respectively by the same amount and at the same time every day.

OBSERVE:

What changes happened to the plants within a couple of days?

Days	The plants I observed	
	watered with freshwater	watered with salty water
Day 1		
Day 2		
Day 3		
Day 4		
Day 5		
Day 6		
Day 7		
conclusions		

Seawater irrigation is on the way!

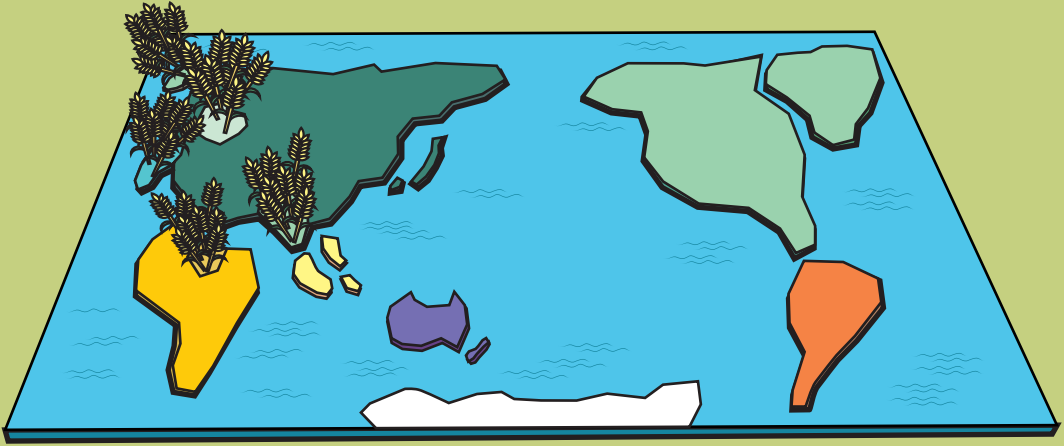


The pickleweed

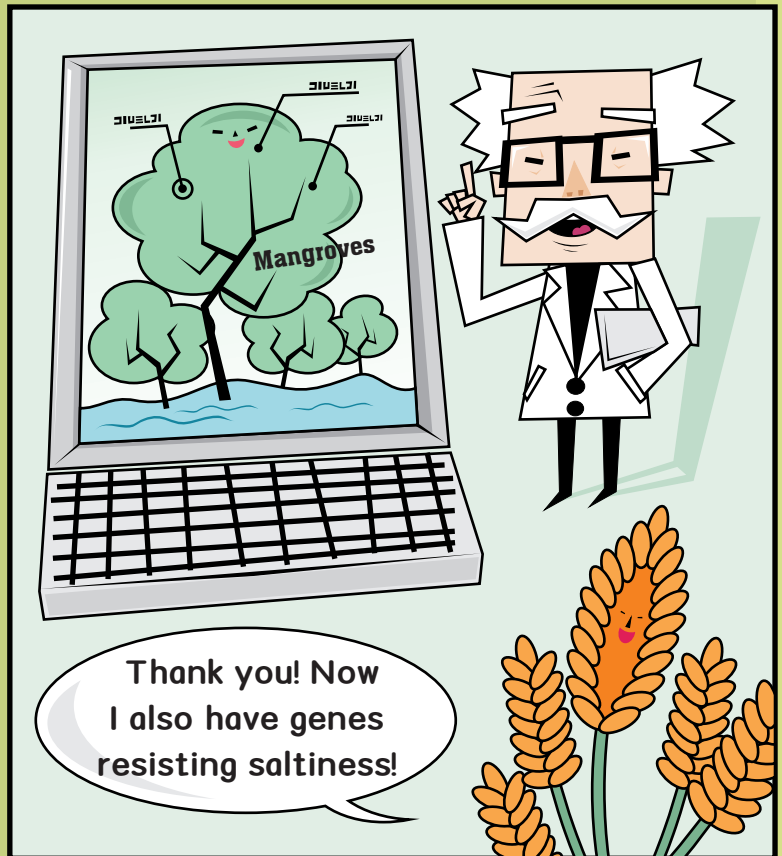


In Saudi Arabia, scientists have successfully grown pickleweed, a plant, with seawater irrigation. The pickleweed is a salt-loving plant that actually thrives on higher saltiness. It grows where little else will, and produces better edible oil than soybeans.

Many countries in the world are conducting experiments with seawater irrigation. Hainan Province, an island province in China, has succeeded in growing its own salt-tolerant crops.



After researching on the genomics of salt tolerance in maritime plants, scientists in Hainan Province have transplanted the salt-tolerant genes from mangroves to crop plants so as to induce higher salt tolerance.



Precious FRESHWATER

Have you ever wondered how much water we humans can use from the abundant blue on earth?

Find a 1.25-liter-size coke bottle, and fill it with one liter of water. Assume the one liter of water is all the water on earth, do you know how much of it is potable freshwater?

Let's find the answer!

Materials:

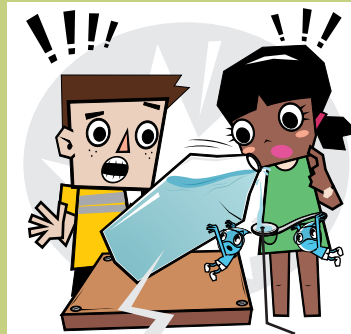
A 1.25-liter coke bottle, a transparent cup, a teaspoon, and a dropper.

Directions:

1. Fill the 1.25-liter coke bottle with 1 liter of water.
2. Pour a teaspoon of water from the bottle.
3. Absorb some water with the dropper, then release one drop on your hand. This one drop of water will be like all the freshwater that humans can use.



All the water on earth



Water in oceans and
saltwater lakes



Freshwater available
for human use

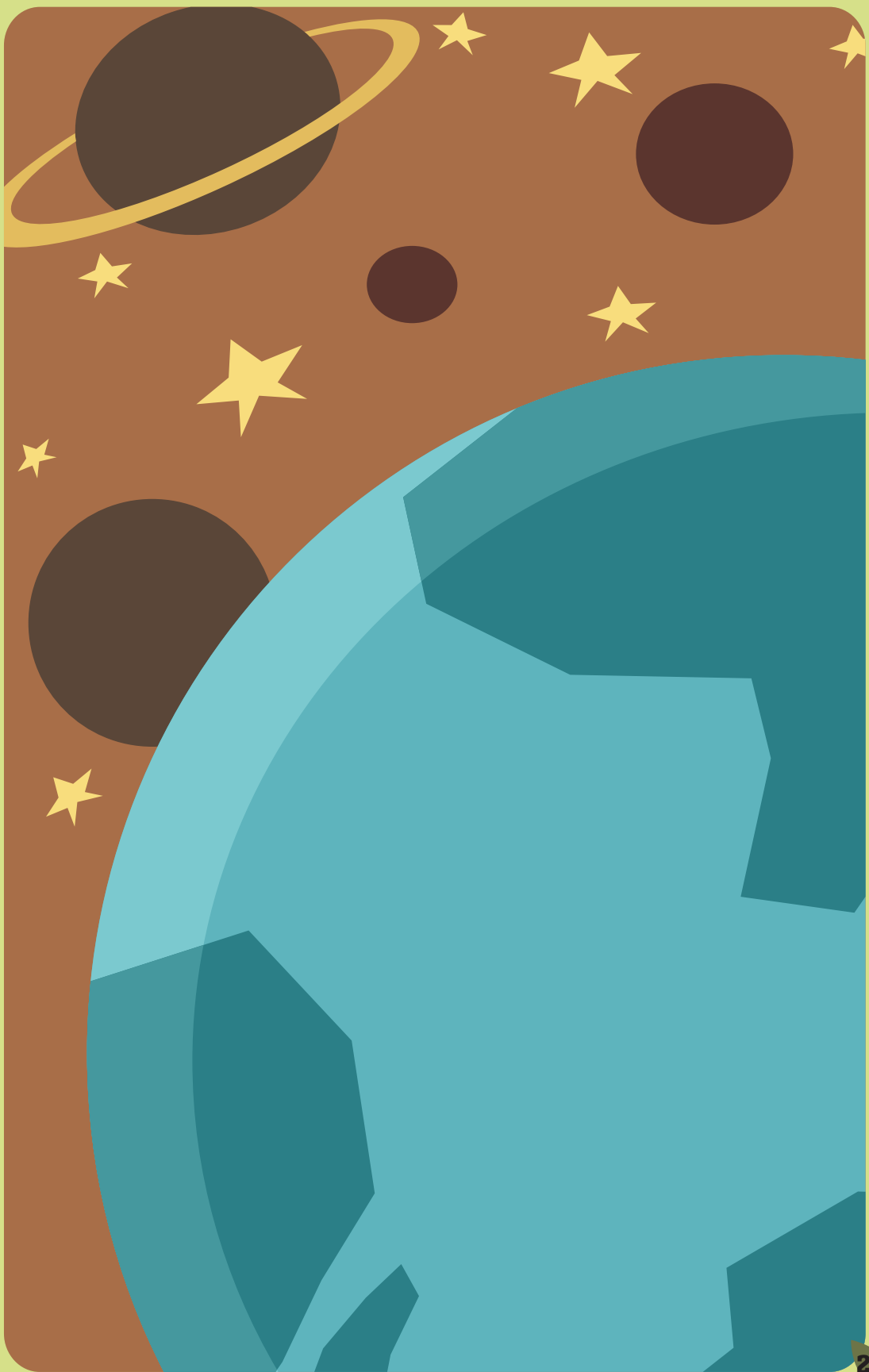


This chapter tells us a simple truth: Most of the earth's surface is covered by water.

However, you have also discovered through the experiment that although water exists abundantly on the earth, freshwater is scarce. And the most of this teeny-tiny fraction of freshwater is locked in the north and south poles of the earth or deeply underground, hard to exploit.

If all the water on the earth is as much as what a large coke bottle can hold, the freshwater that we can use is just a drop from the dropper!

Since the freshwater that supports life on earth is extremely little as such, we should do everything in our might to protect the precious freshwater resources!







Chapter Three: Playful Water

**Love to
Rhyme**

Can you
answer me?

**Game
Zone**

What is the
shape of water?

**Brain
Workout**

Am I different?

**Discovery
Channel**

A water hunt!

Can you answer me?

Dear water that is clear, I have questions that are sincere:

Do you have places to dwell?

Do you have dresses in style?

Do you smell and taste well?

I dwell in every place you can imagine,

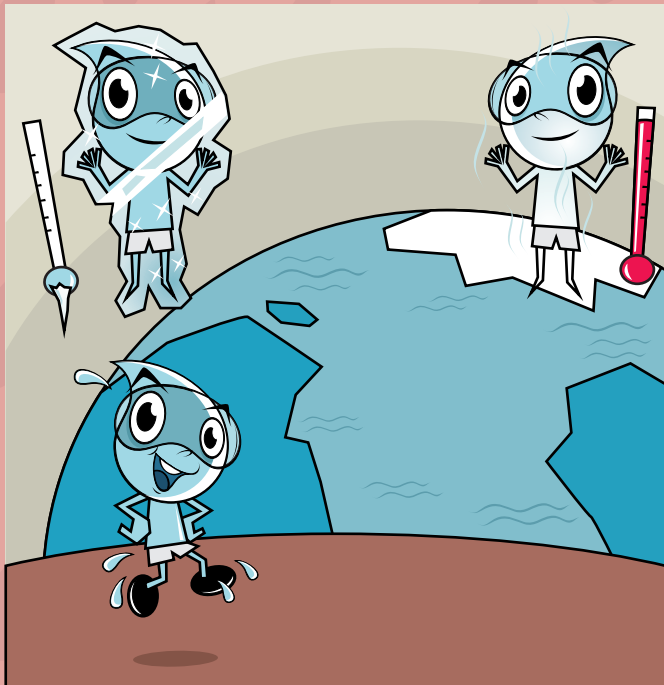
I dress in styles quite in fashion:

Icy, watery or vapory,

I change styles when temperatures vary.

How do I smell and taste?

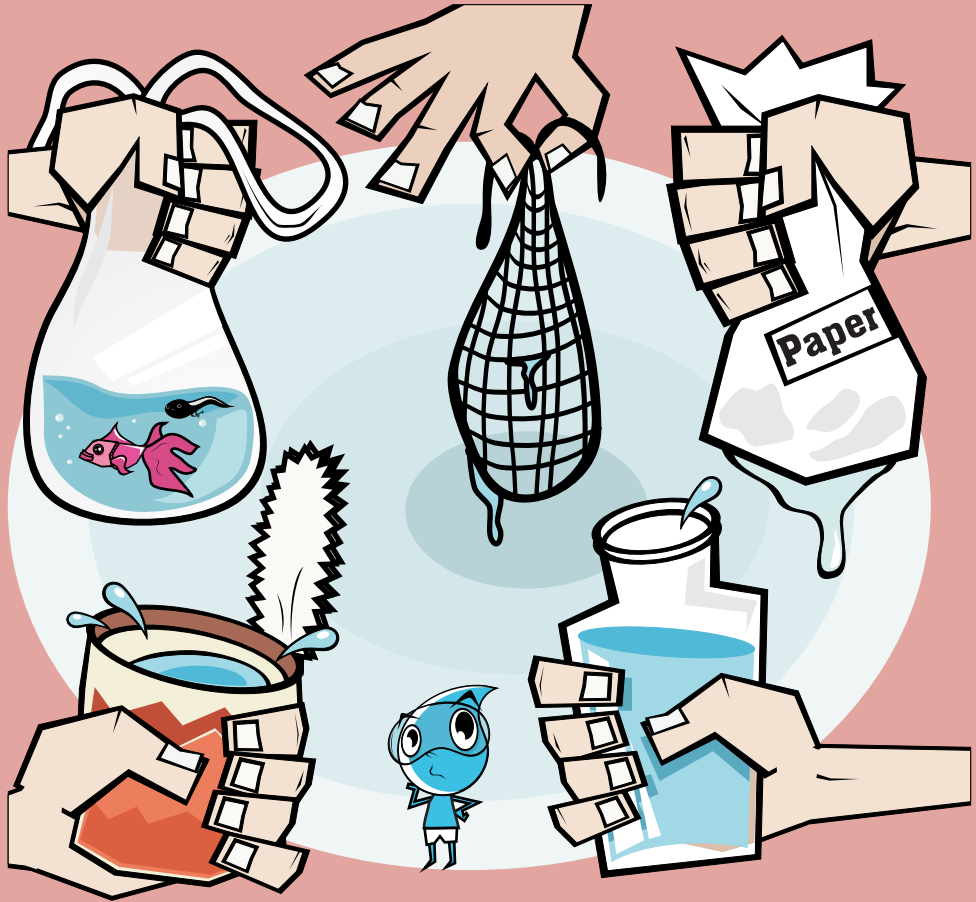
Scoop and sniff, and take a sip!



Aha!
Playful water,
You are
colorless,
odorless,
and tasteless!

What is the shape of water?

Game Zone



Balls are round, books are rectangular, and the earth is spherical...

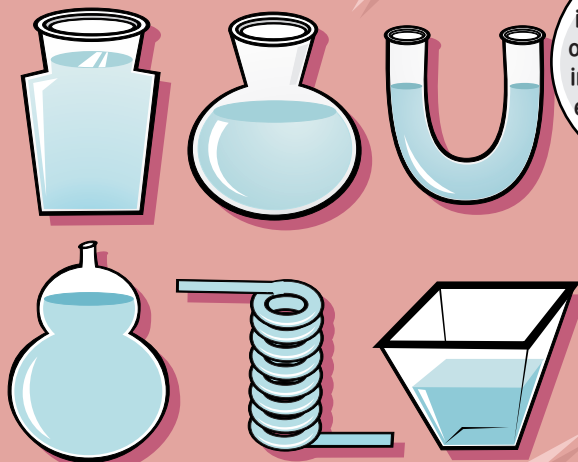
What is the shape of the liquid water? The following game might tell you.

Materials:

Any containers that can hold water (bowls, beakers, jars, plastic bags, straws, etc.), and water.

Directions:

1. Pour water into various containers, then observe what shapes water turns into. Any more shapes water can take?
2. Fill up the containers until they overflow. Any more ways to let the water flow?



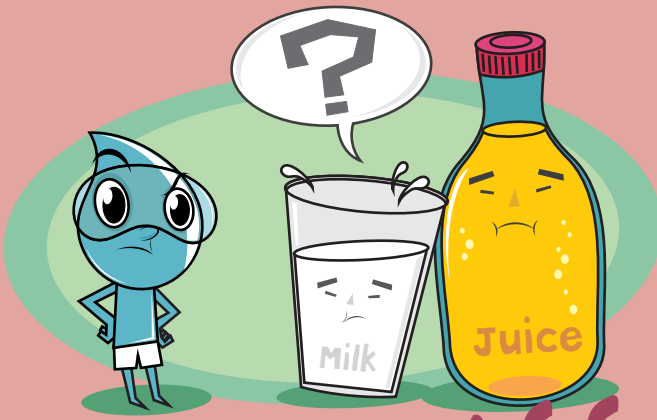
When water is still, it adopts whatever shape of the container it resides in; when it is moving, it is ever-changing and has no definite shape...



3. Pour water into a bottle and move the bottle in various directions. Watch the surface of water when it becomes still. Any changes?
4. Draw up various shapes of water inside different containers, with captions if you want.

I CAN DRAW





Am I different?



Put a cup of water in front of you, look at it and name the characteristics of water at your best. THINK: How is water different from such liquids as milk, vinegar and juice?

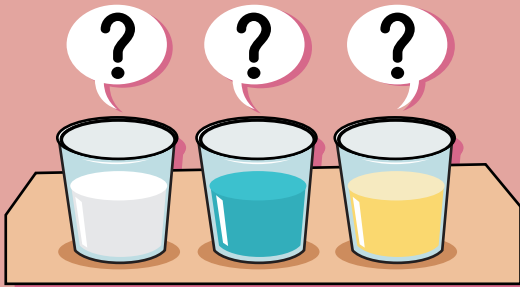
Materials:

Juice, milk, vinegar and honey.

Directions:

1. Fill cups with different liquids, then observe how these liquids are different.
2. Blindfold one kid, then rearrange the order of the cups.
3. The blindfolded kid smells and touches the liquids in each cup, and speaks out how each of them are similar and different.

Remember: No tasting!

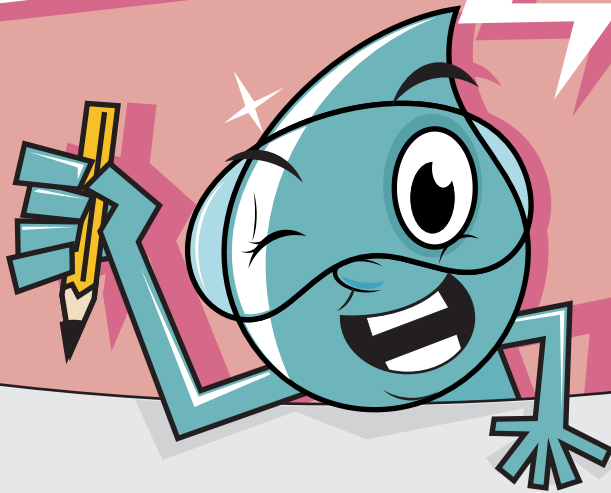


SMELL



TOUCH

Write down what you have observed!



Liquids	How it looks	How it feels	How it smells	Can it freeze? (guess)
water	colorless		odorless	yes
Milk	white			
Vinegar				
Honey		thick		
Juice				

Playful Water

Put the liquids in the freezer compartment of a fridge. Store for one hour before taking them out.

OBSERVE 🔍 : Did you guess right?





A water hunt!

Materials:

Recorders, notepads, pencils.

Directions:

1. Look for various sounds of water in daily life.
2. Record the sounds.
3. Play them out to your classmates, and see if they can guess where these sounds come from!

challenge opens:
Who “hunted” out
the most whimsical
sounds of water?



Chapter Four: Mysterious Water

**Story
Time**

Water the
magician

**Game
Zone**

Water on
a coin

**Discovery
Channel**

Surface tension

**Brain
Workout**

Magic solvent





Story Time

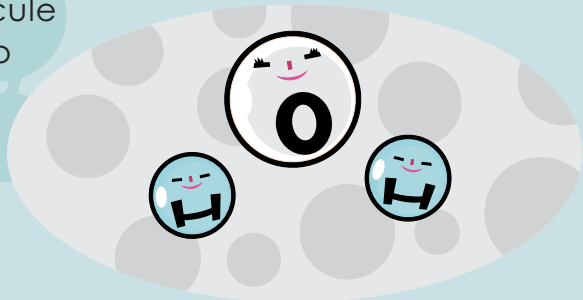
Water the magician

You might think that water is all simple and plain, but in the eyes of scientists, water has a lot of mysterious properties fun to explore.

Water has three states. It is a liquid at room temperature, freezes when the temperature hits 0 degrees Celsius or 32 degrees Fahrenheit, and becomes steam when it is boiling.

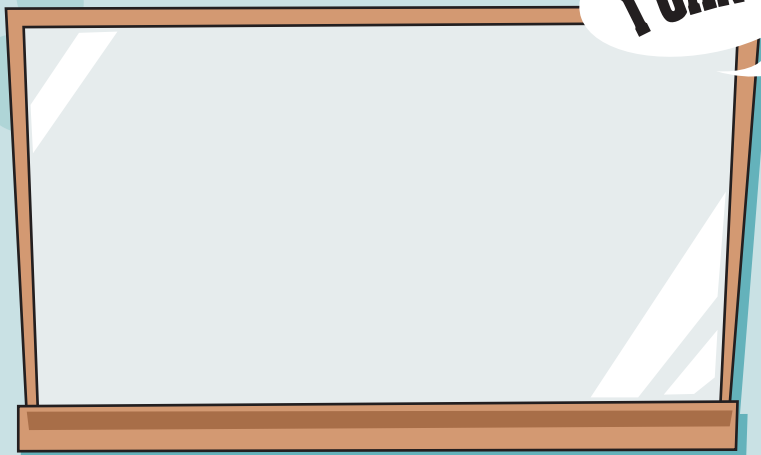
Oceans and lakes help regulate the temperature at the earth's surface. They hold up excess heat in the water when it is hot, and release the heat when it is cold out there.

The wonders of water are created by how water molecules attract each other and form water as unique as it is. Each water molecule has a simple structure of two hydrogen atoms and one oxygen atom. H_2O is the chemical formula of water, where H stands for hydrogen and O for oxygen.

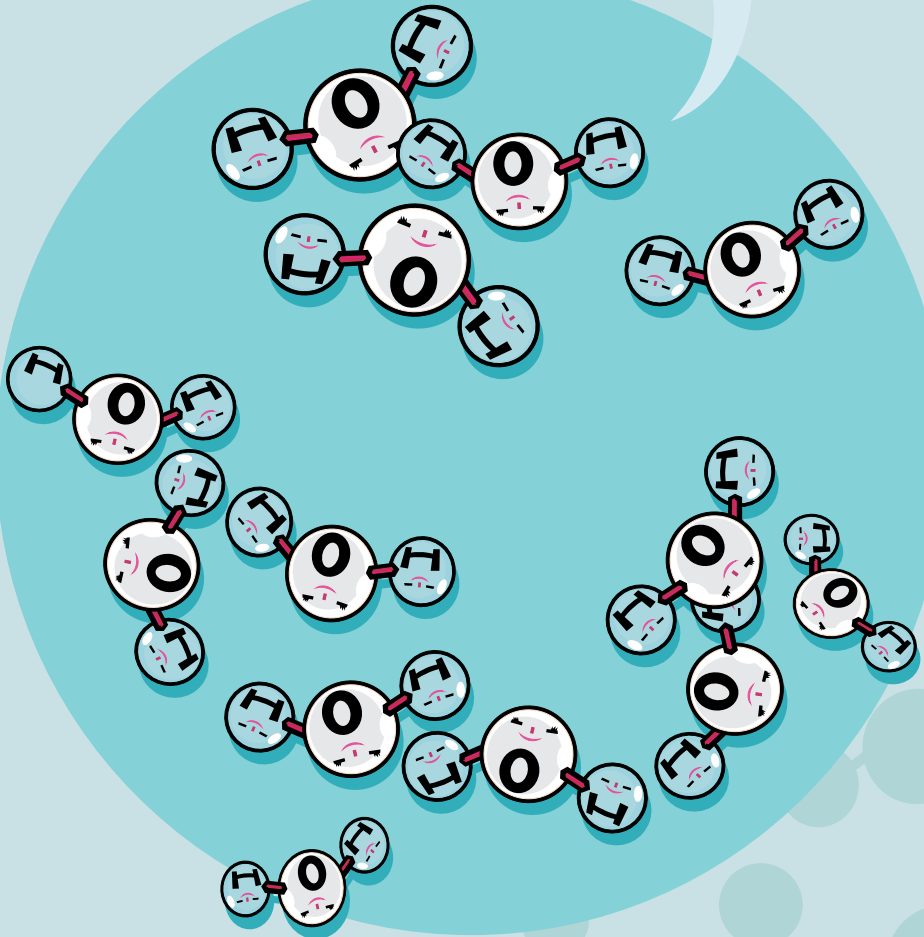


How are the atoms of a water molecule bonded to each other? Use the stickers of hydrogen and oxygen atoms to make your water molecule!

I CAN CREATE

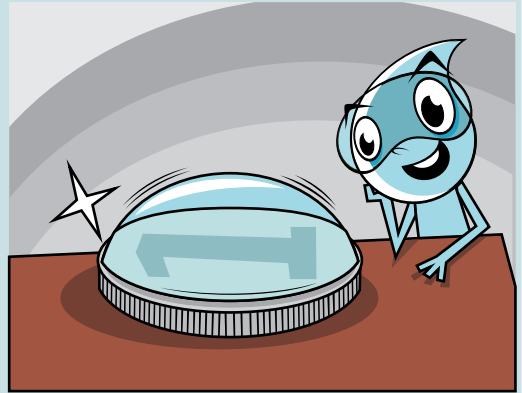


The truth is, the atoms of a water molecule don't line up straight. Instead, they form an angle! The two hydrogen atoms are like two brothers sitting at the tips while the oxygen atom is like a big sister at the vertex. They bond firmly with each other because they have a magnet-like, dipolar nature: The big sister is slightly negatively charged, and the two brothers are slightly positively charged. The hydrogen brothers not only bond with their sister in the same molecular family but also grab the hands of their neighboring oxygen atoms!



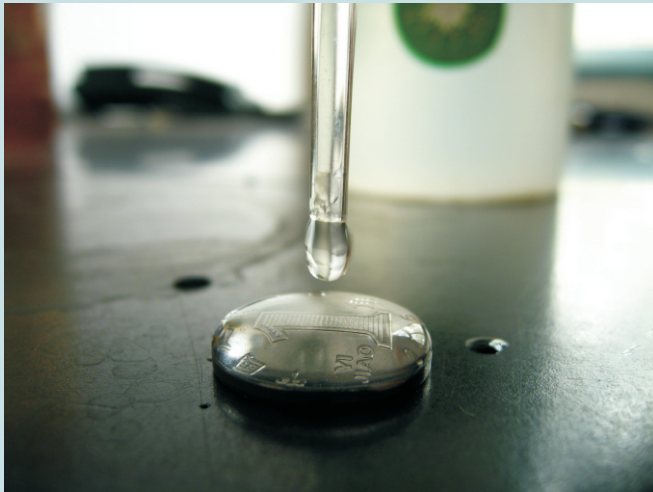
Now, let's play a game and feel the magic of the water. Are you ready?
Here we go!

Water on a coin



Materials:

Coins, droppers, cups of clean water.



Before we start, GUESS (??): How many drops of water can the surface of a coin hold (till water spills over)?

Directions:

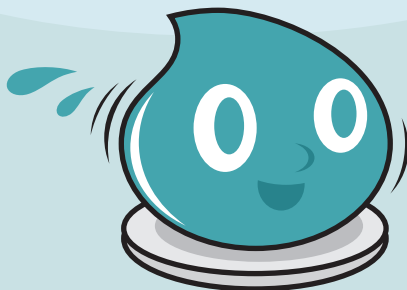
1. Divide the kids into six groups.
2. Each group uses a dropper to carefully and slowly release as many water drops as possible onto the coin until water spills over.

Do the results surprise you? Try another two times.

Game record:

Group No.	1	2	3	4	5	6
Your guess (drops)						
First try (drops)						
Second try (drops)						
Third try (drops)						
The average of three trials (drops)						
Your guess VS The average (drops)						

Remember: Use clean water only!
Will the results be different if we add other matters to water, like orange juice or laundry powder? Give it a try and see how many water drops can stay on a coin this time!

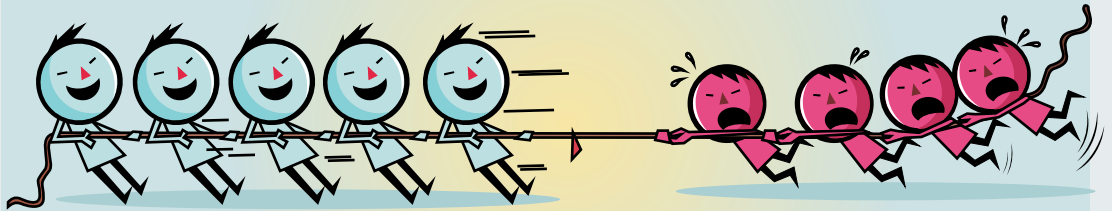
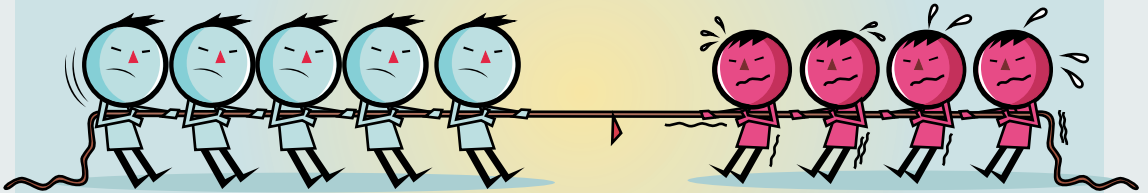


Surface tension

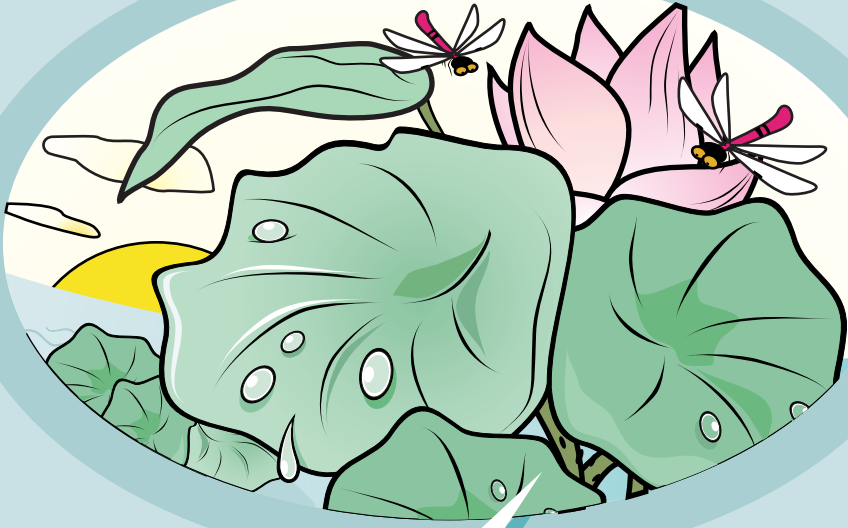
Amazingly, quite a few drops of water can build on your coins! Do you know why?



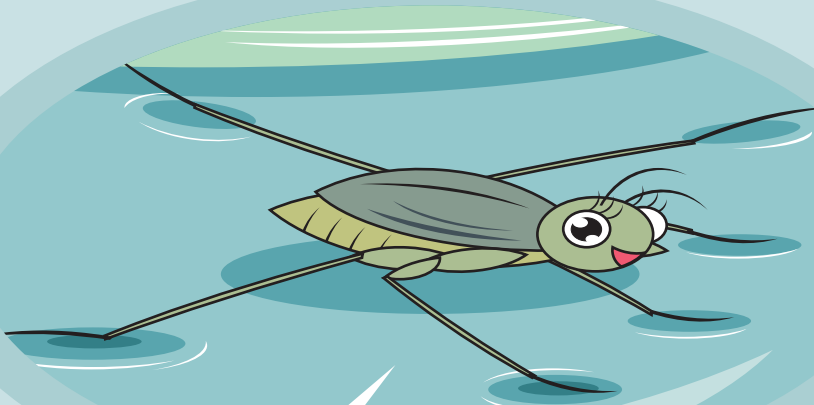
It is because water has a property we call surface tension! In simple words, surface tension is the tendency of liquid surfaces to shrink into the minimum surface area possible. Water molecules are not loners; they want to cling to each other, even in groups of two or three. So the water molecules from within a liquid bond tightly with their neighboring buddies, but the water molecules at the surface are not that lucky—they have no buddies above them to grab on! So they cling to whoever comes into contact with them more strongly. Thus, the water surface comes under tension from imbalanced forces, allowing it to bear things denser than itself!



DISCOVER 🔍 : Can you find other cases where the surface tension of liquids comes into play?

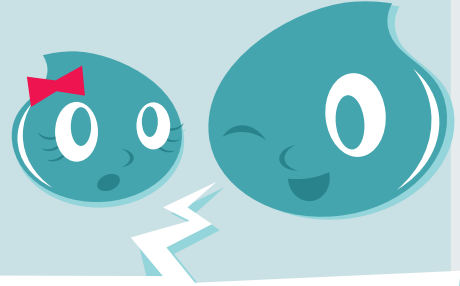
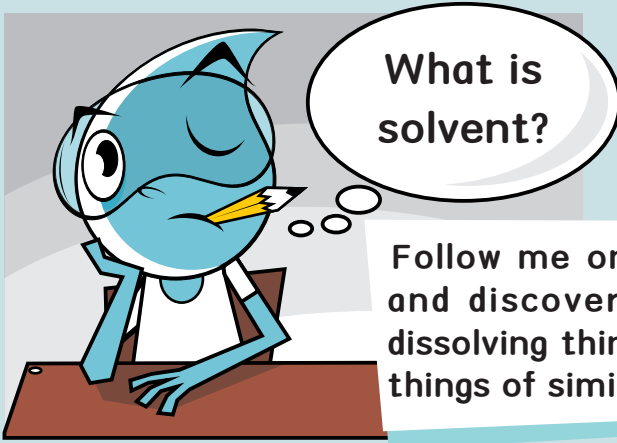


Morning dew on leaves



A cool "water strider" can walk on water!

Magic solvent



Follow me on a hands-on experiment, and discover another trick of water: dissolving things! All liquids can dissolve things of similar properties. You'll see!

Materials:

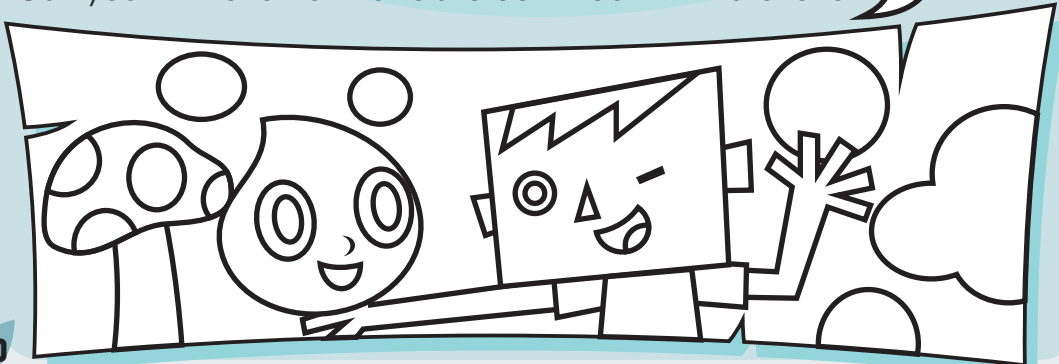
Six plastic cups (better transparent), water, oil, honey, salt, laundry power, and flour.

Directions:

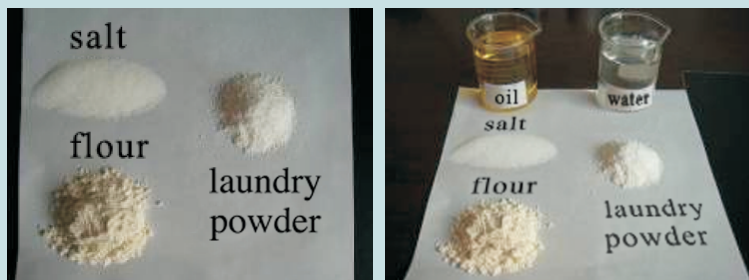
1. Number the six cups by No. 1, 2, 3, 4, 5 and 6 (with a marker or stickers).
2. Pour water into cups No. 1, 2, and 3, and equal amount of oil to cups No. 4, 5, and 6.
3. Add equal amounts of salt to cups No. 1 and No. 4, and stir.
4. Add equal amounts of honey to cups No. 2 and No. 5, and stir.
5. Add equal amounts of laundry powder to cups No. 3 and No. 6, and stir.



Can you think of other matters to be mixed with water or oil?



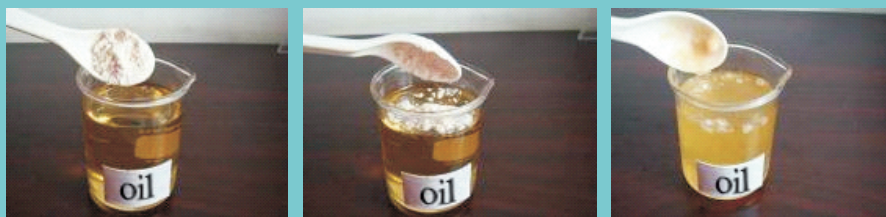
Let's see what happens when we add flour into water and oil respectively.



Put a spoon of flour into water, stir and observe.



Put a spoon of flour into oil, stir and observe.



Compare how flour dissolves in different liquids.

6. Note down what you observed with various matters being mixed with water and oil, like this:

dissolved matters solvent	salt	Honey	Laundry powder	Flour
water					
oil					

THINK:

1. Can you describe what you saw?
2. Which solvent dissolves things faster, water or oil?
3. Could you tell what a solvent is?

I SAW

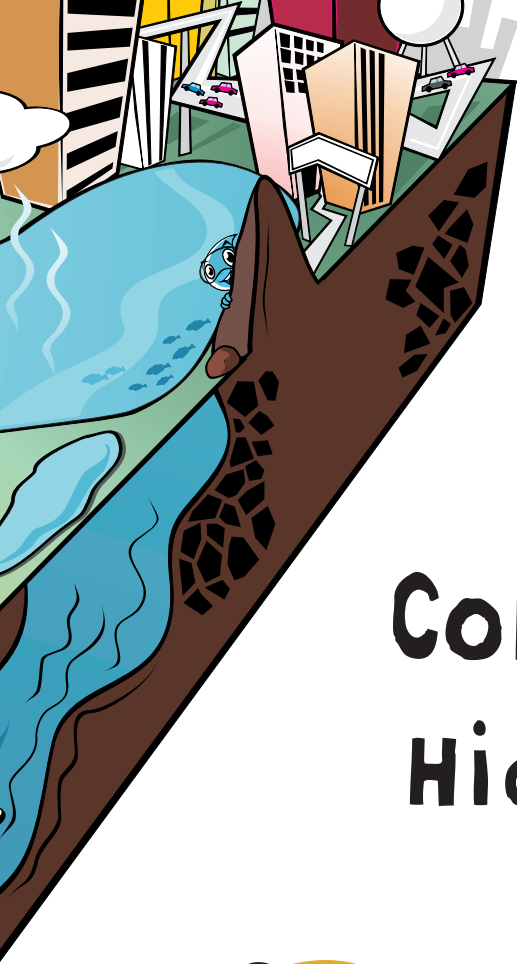
A SOLVENT IS...



. disappear and dissolve matters gaseous or liquid, solid which in liquid a is solvent A







Chapter Five: Come and Play, Hide and Seek!

**Story
Time**

Water is a mystery

**Game
Zone**

invisible me!

**Brain
Workout**

Looking for water

**Discovery
Channel**

Can you live
without me?

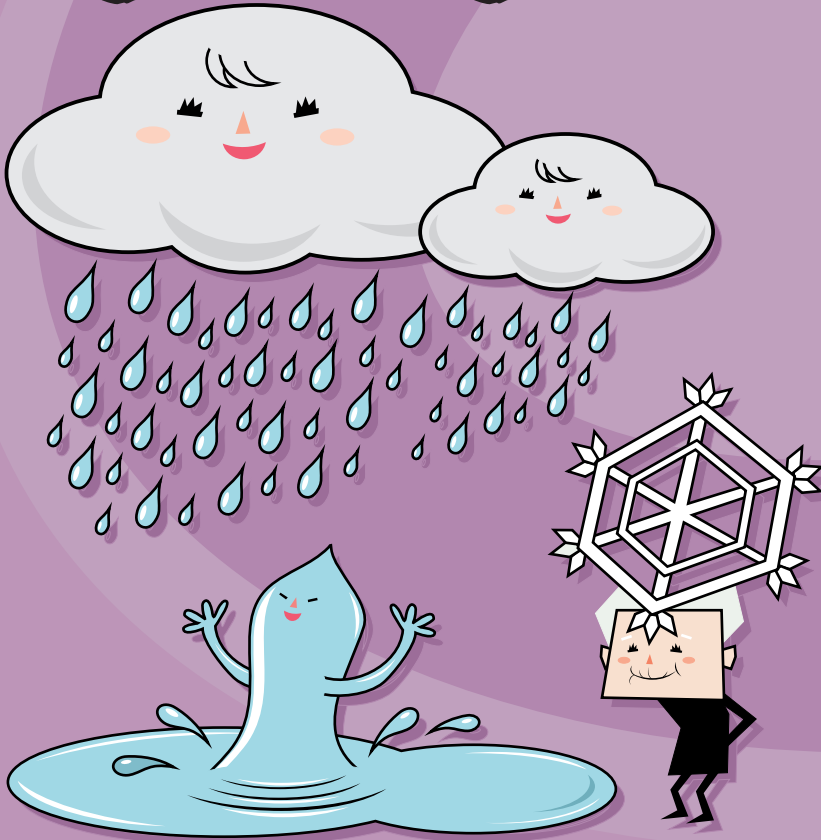
Story Time

Water is a mystery

Water, you naughty teaser,
Many tricks you can master.

Dripsy dropsy, you dance in
showers of rain,
Sparkling and glittering, you frost
like flowers on a windowpane,

Steamy and misty, we always
catch you in vain!
Because you float and fade and
never remain...

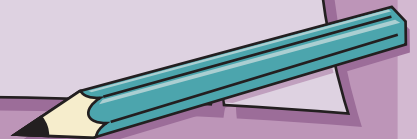





These water mysteries happen around us every now and then. Can you tell what has happened to water?



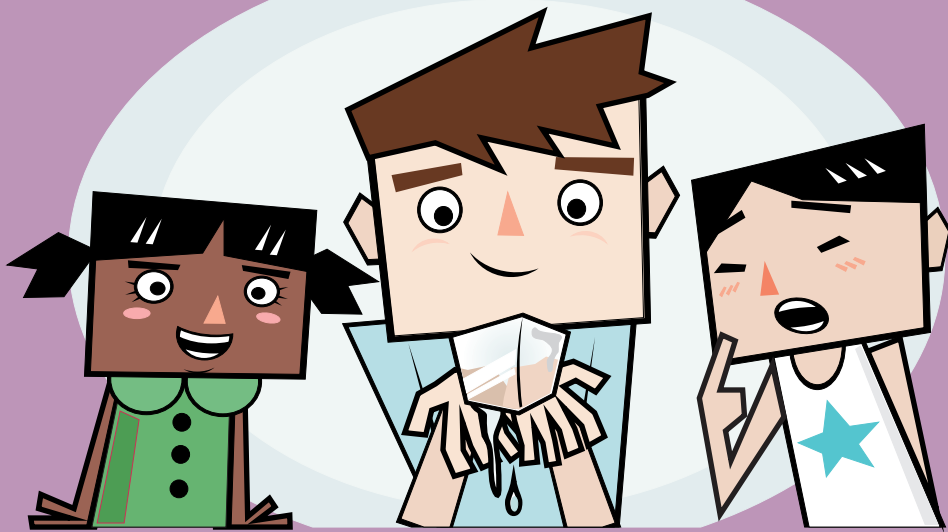
Water has turned into...



Invisible me!

Place a tiny piece of ice in your hand, **OBSERVE**  what is happening!

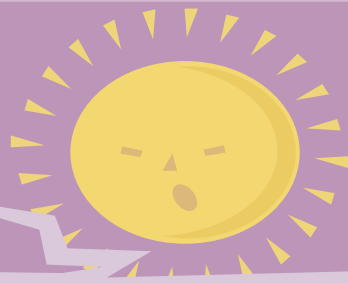
Note down the changes to the ice.



The changes of water

Change from...to...	From ice to liquid	From liquid to gas	From ice to gas
Time-taken (minutes)			

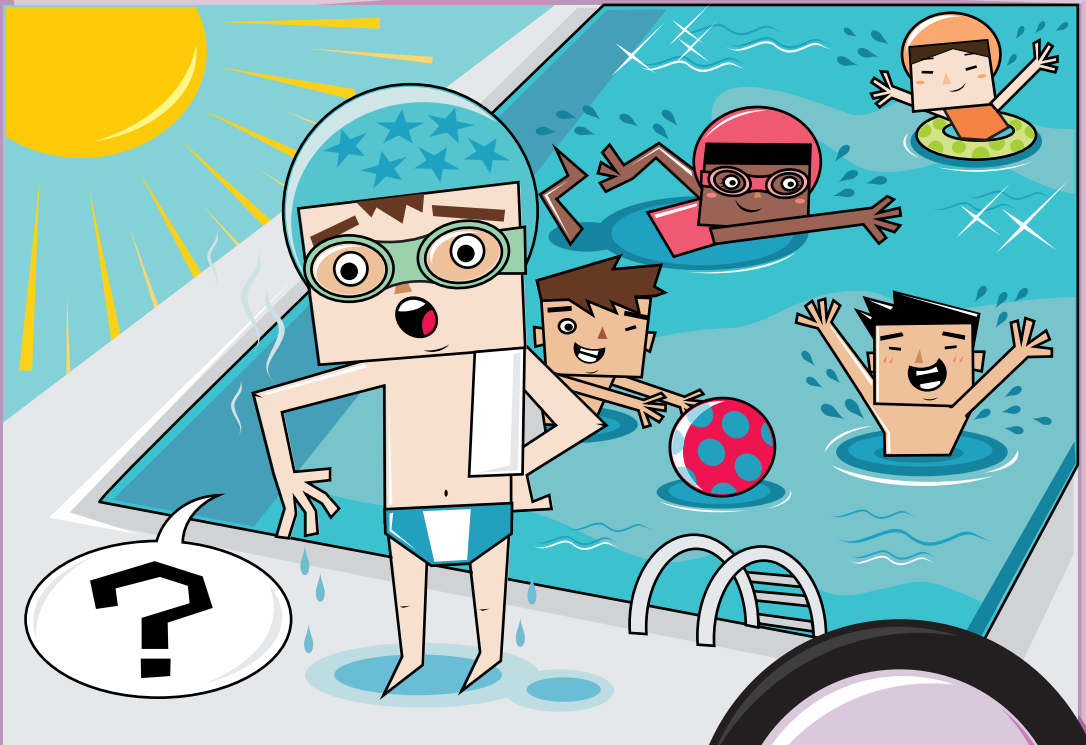
Brain Workout



Why do droplets of water form on the surface of a bottle of cold drink, which you just take out of the refrigerator?

Why does a blackboard dry up soon after you clean it with a wet sponge?

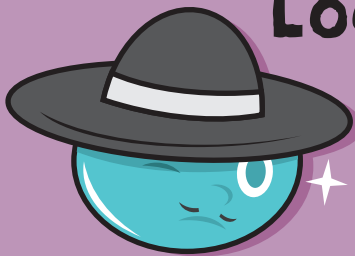
Where is the water on your body gone, not long after you come back all wet from swimming?



Come and Play,
Hide and Seek!

Looking for

WATER

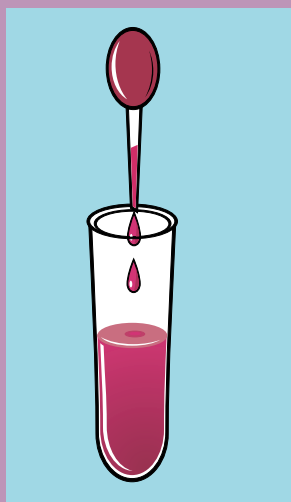


Invite your teacher or parents to help you do a simple science experiment, and you will SEE 🧐🧐 why!

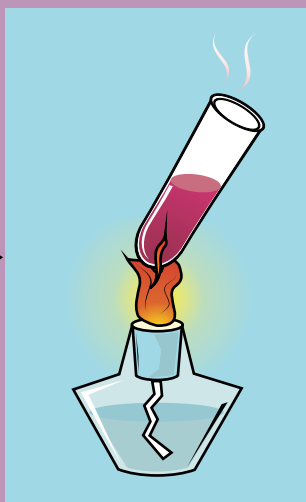
Materials: Test tubes, droppers, alcohol lamp, retort stand, test tube holder, glasses of water, paints or colored liquids.

Directions:

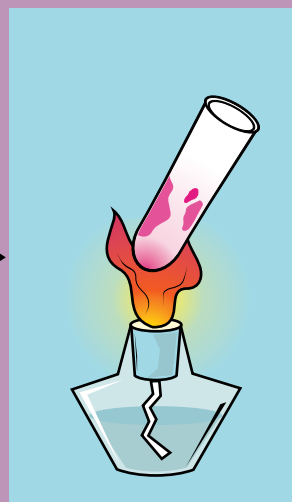
1. Find paint, oil, vinegar, soy sauce, or other liquids at hand, add them in different glasses of water, mix and OBSERVE: What happens when water mixes with various kinds of liquids?
2. Pour each of the mixed liquids into test tubes.
3. Heat the test tubes over the alcohol lamp for about two minutes. OBSERVE again: What is left inside, and what is gone?



Use a dropper to release colored liquids into the test tubes.



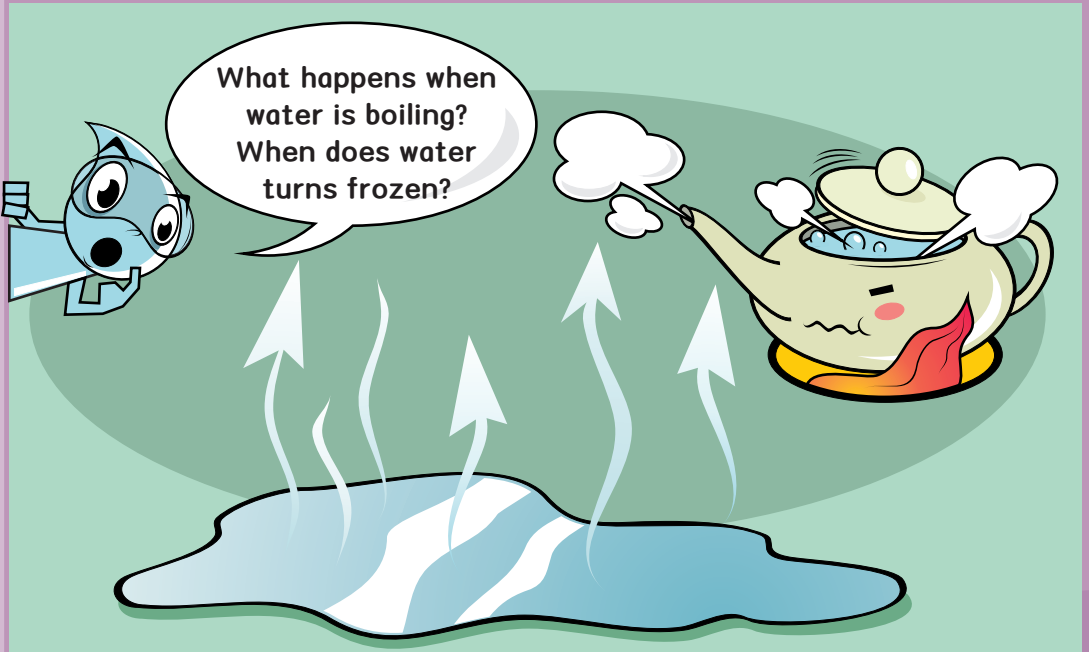
Heat the test tubes over the alcohol lamp.



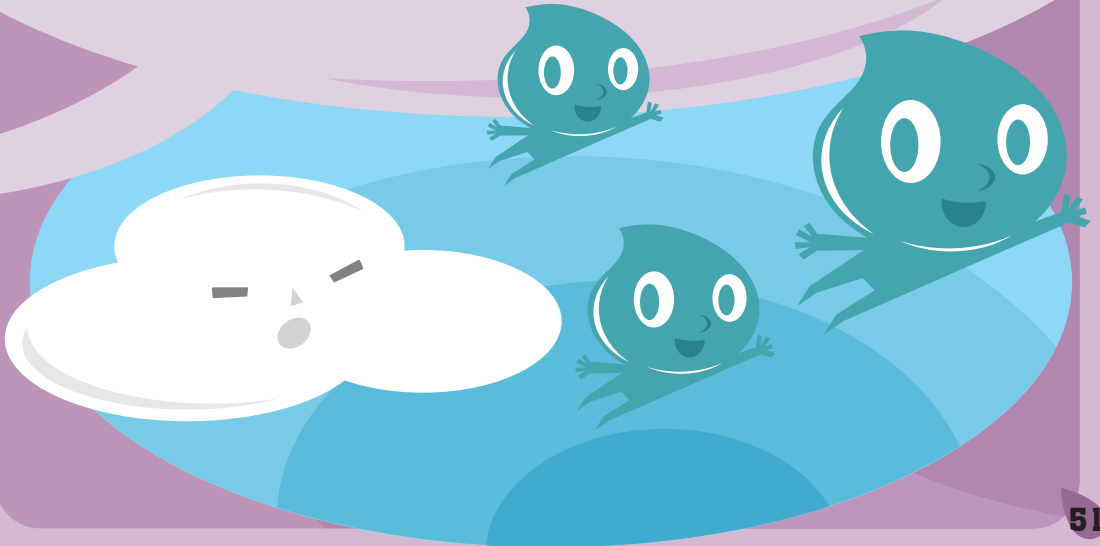
Color stains only!



The mysterious water goes by more than one style. The liquid form of water is the most commonly seen. Water can also freeze and become ice when it is cold enough; water may steam up and vaporize when it gets boiled!



I bet you didn't know that water turns to gas also at room temperature. Think of a day when you get wet from walking in the rain: You go back home and hang the wet clothes. They become dry again after a while. How does this come about? Where has the water gone? Water has gone and mixed into the air, which phenomenon we call evaporation. Usually, we can't see it when water vaporizes, because it has perfectly blended in and become a part of the air.



Can you live without me?

Discuss and decide with your parents on experiencing a day without drinking water, preferably a weekend.

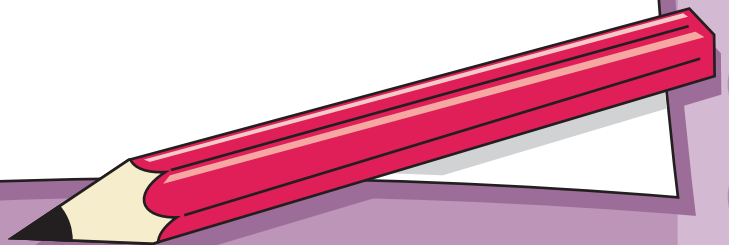
Try not drinking water (nor any drinks or fruits) after breakfast, till you feel that you must. **DISCUSS**: how long did you hold up for not drinking water? How did that make you feel?



How I went a day without water...



A large white sheet of paper with ten horizontal lines for writing, pinned to the purple background with two purple pushpins on the left side.







Chapter Six: The Wonderful Water Cycle

**Story
Time**

Aqua the explorer

**Discovery
Channel**

Where can you
find me?

**Brain
Workout**

Travel with me!

**Game
Zone**

My mini
water cycle!

Story Time

Aqua the explorer

I am Aqua.



Hello everyone. My friends call me Aqua.

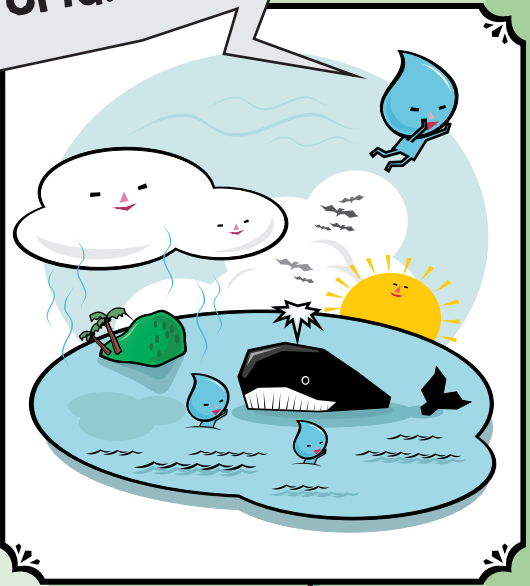


I used to live below the earth's surface with my family. Once, an ancient volcano erupted. The superheat it created turned us into water vapor and blasted us into the air.



what a fabulous world!

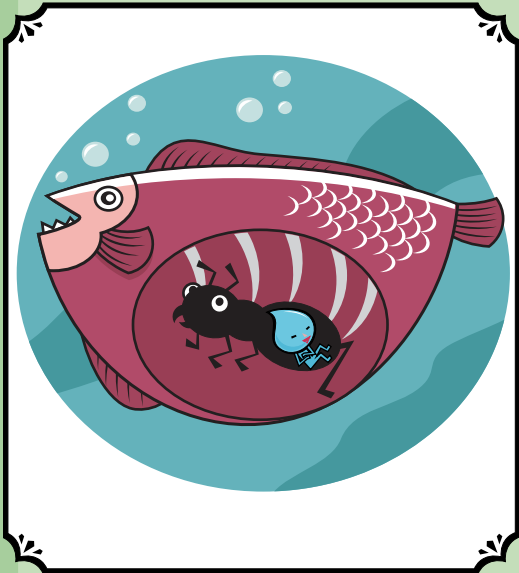
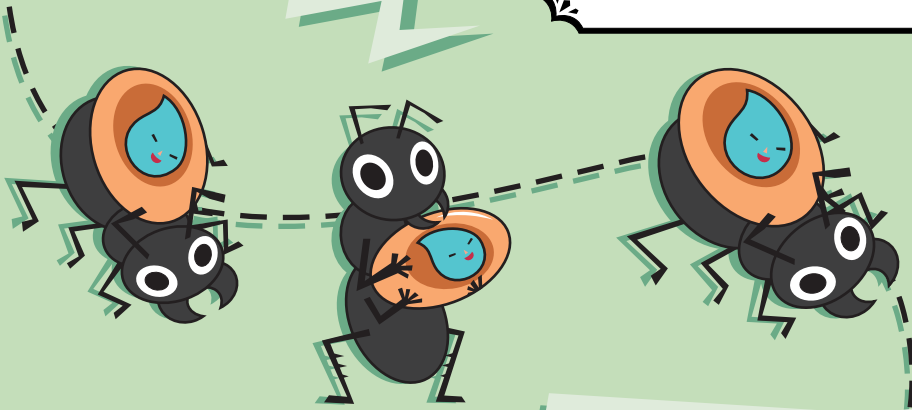
I drifted east and west. I flew up and down. It was the biggest fun for me to play in the sky. "Aqua! Come down and play with us!" Shouted my liquid friends in the oceans. I looked down and shouted back, "Come on guys. A brave new world is out there! Let's explore!"



So I was joined by more and more of my friends. As we wandered higher in the air, we felt colder. We decided to cuddle and form clouds. When the clouds became too heavy to hold any more of us, we jumped and fell as rain drops back to the land.



I fell and rolled down the hillside until I was taken in by soft soil. Soon some tree roots felt me and took me in. When I was inside the tree, I kept myself busy by carrying life-sustaining nutrients up and up, to the trunk, to the branches, to the tips, and finally to a plump hazelnut.

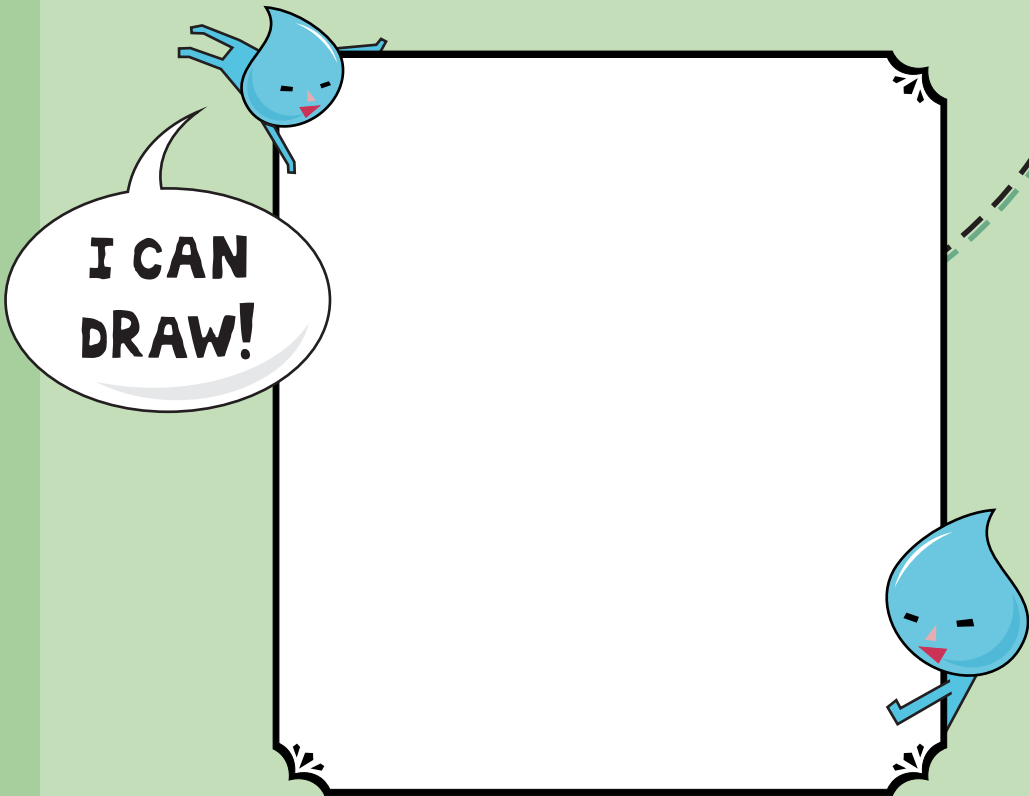


The hazelnut dropped and was carried home by an army of hungry ants. No sooner had I realized that I tumbled inside an ant's belly! When spring came, the ants marched out of their hole. A sudden gust of wind blew some ants into a stream nearby. A hearty meal for fish! That was how I ended up inside a fish. The fish swam toward the sea, so did I! Back to the sea!



The sun came out; the sea became warm. Basking in the light, I felt airy and feathery. Not until I floated up high did I realize, "I'm back! I can fly again!"

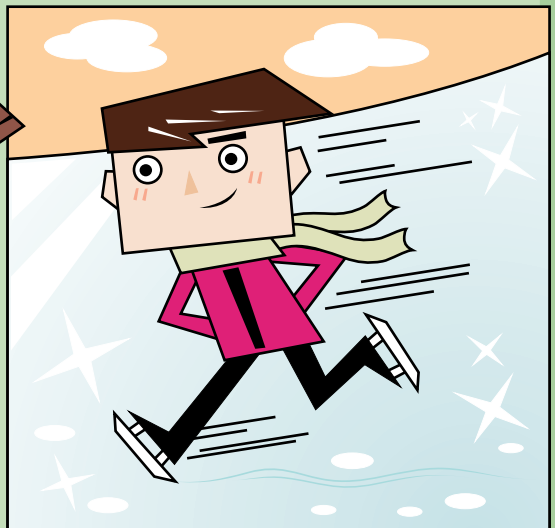
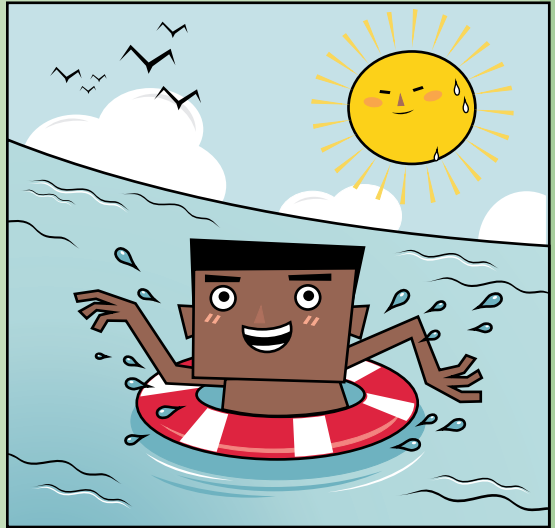
The story of Aqua continues...
Do you know where else Aqua traveled after that?



Where can you find me?



1. Air surrounds us, so does water... But where is water exactly?
2. Draft your version of a water story, and share it in front of your class.



Brain Workout

Water drops fall on your palms on a drizzling day. You look at them and wonder: Where do these water droplets come from?

Sure they were in the clouds up high just before they fell from the sky. But at the same time last year, they might be roaring in the Yellow River of China.

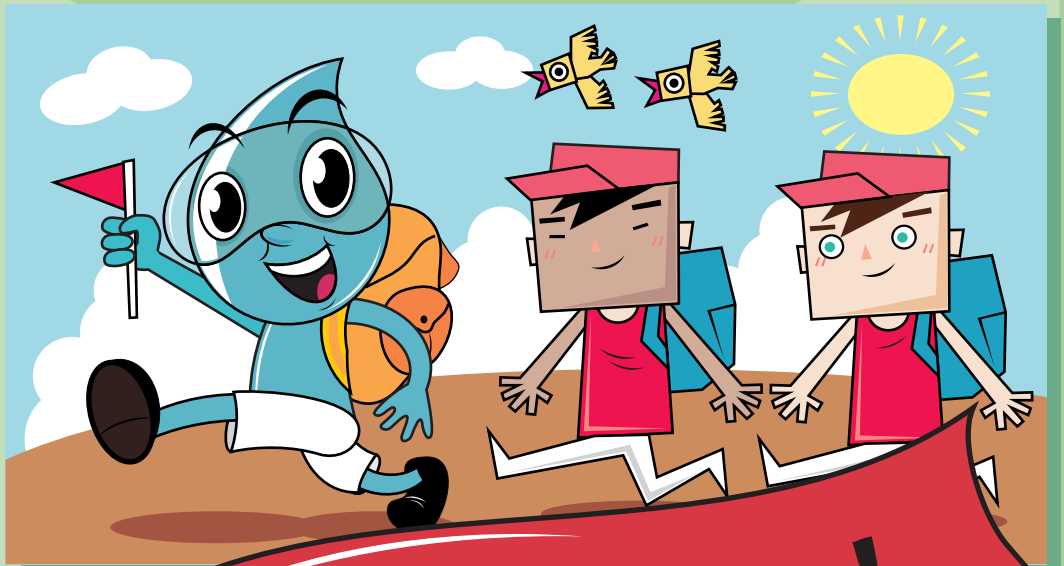
They might have been locked up in glaciers of Antarctica.

They might even have dripped on the heads of dinosaurs hundreds of millions of years ago...

Sounds like a myth to you?

Indeed it's true! Water in nature is on a never-ending trip, which we call the water cycle. Water is always on the move: It goes up in the atmosphere, dives deep in oceans, and flows across the land.

Water also goes in and out of human bodies, animals, flowers, and trees. The whole world is its playhouse!



TRAVEL WITH ME!

Let's do a fun experiment and observe the water cycle up close and personal.

Materials:

Dry sand, water, a bowl with flat base, a cup/bottle that fits nicely in the bowl, plastic wrap, a rubber band, a small stone and a lamp (any thermal light will do) if necessary.

1. Pour water into the bowl until the base is fully covered. It simulates water in oceans.

2. Fill the cup/bottle with sand, and put it into the bowl.

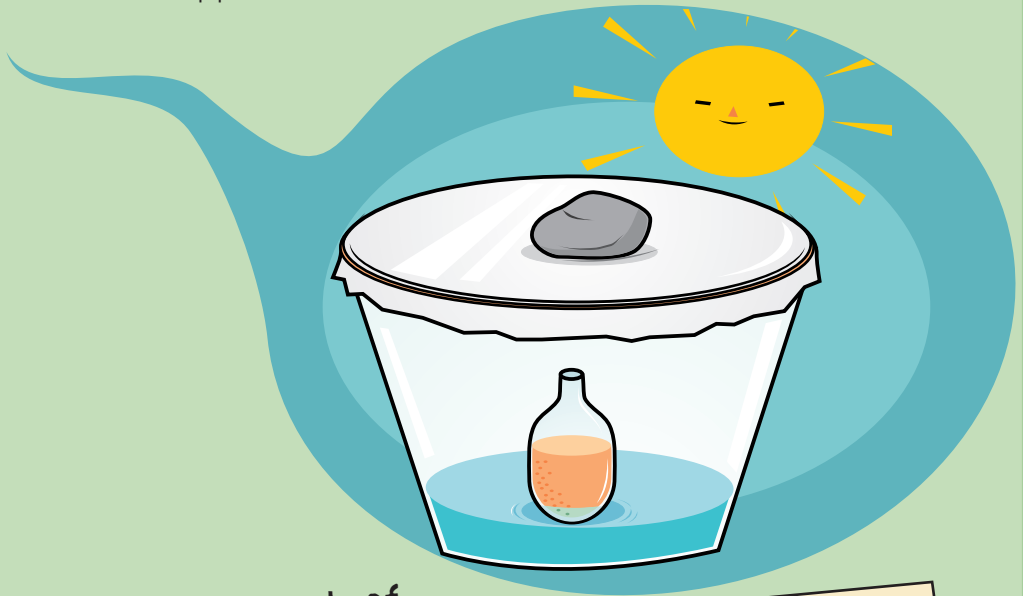
Directions:

Take it as soil.

3. Cover the bowl with plastic wrap and use the rubber band to seal the wrap tightly, to mimic the sky.

4. Put the small stone on the plastic wrap right above the sand cup/bottle, to mimic a dark cloud.

5. Place the bowl in the sun or under light. Observe what happens one hour later.



I saw a mini water cycle of...

A large, blank, cream-colored rectangular area with rounded corners and a drop shadow, intended for a student to write their observations. It has two small circular punch holes at the top corners.

My mini water cycle!

Game Zone

Phew! After traveling around the world with Aqua, you must have learned quite a few facts about the water cycle in nature. Challenge yourselves with two fun games that unveil the splashy wonders!



The Wonderful Water Cycle

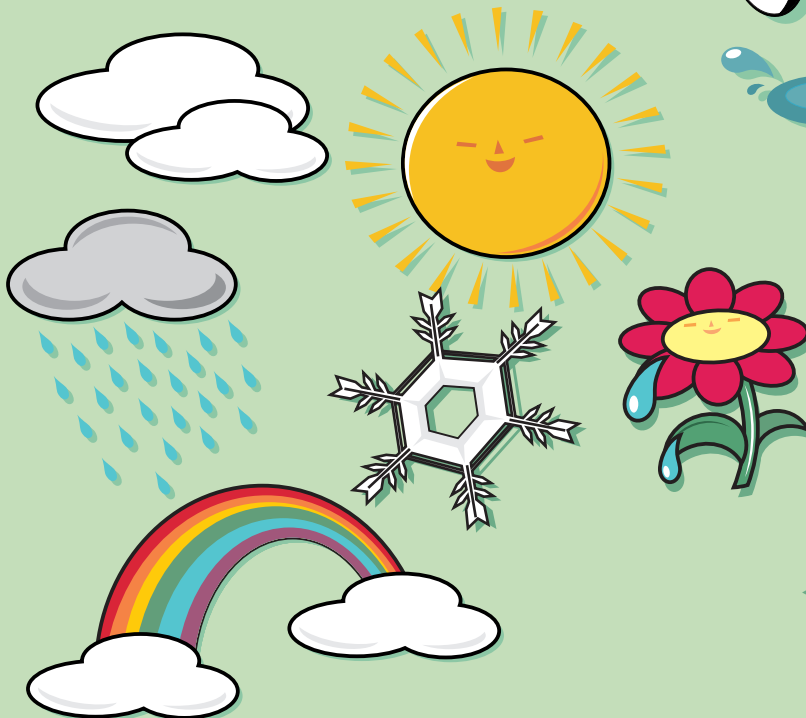
Fun Activity One: Solve the riddles!

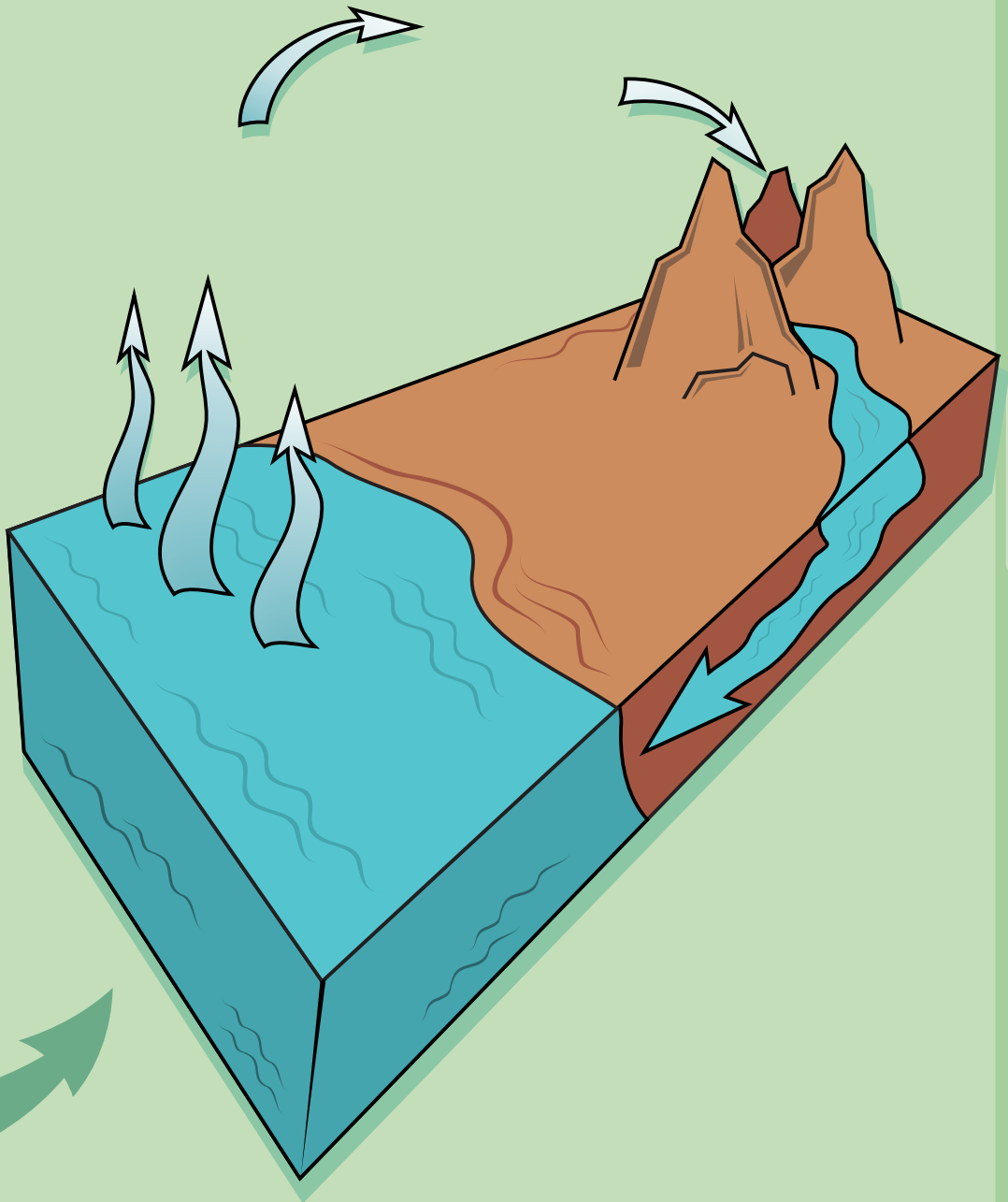
1. Knives can't crack it, axes can't smash it, bullets can't pierce it, but our toothless grandma can swallow it. _____
2. A magician lives in the sky, working wonders we cannot deny. Pigs, sheep and horses come out of his hat, running in and out of sight. _____
3. Thousands of threads drop on land, yet in nowhere can you find. _____
4. Soft as silk, white as milk. Sticks on your head, melts in your hand. _____

5. I'm hard but I'm not a stone, I'm cold but I don't need a coat.
I shine in the sun, I soften in a short. _____
6. When you wake up at dawn, you will find me all on the lawn. _____
7. It rises from the east, it sets in the west. It is cheered when you chill, it is scorned when you sweat. _____
8. A bow-shaped bridge appears up high, after a good rain refreshes us all.
Shining in seven colors of light, it is gone before you can recall. _____

Fun Activity Two: Cut and paste!

Here is a water cycle diagram that shows how water moves in nature. But it is missing some important parts.
Find their stickers at our back pages, and paste them on proper places to make your mini water cycle!





My mini water cycle





Chapter Seven: We can't do without You!

**Story
Time**

My lips are dry

**Brain
Workout**

My day with water

**Game
Zone**

A creek in the woods

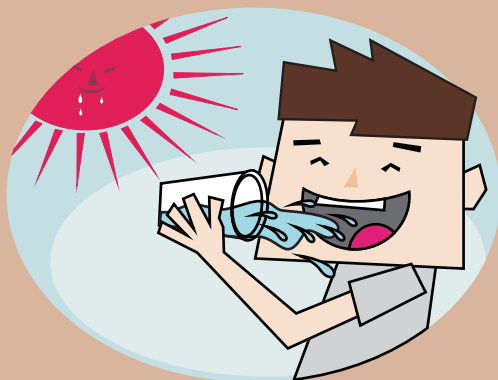
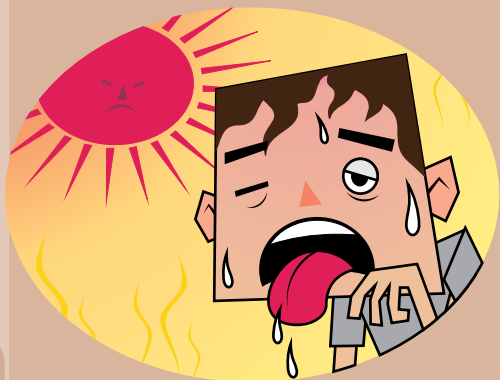
**Love to
Rhyme**

We and water

Story Time

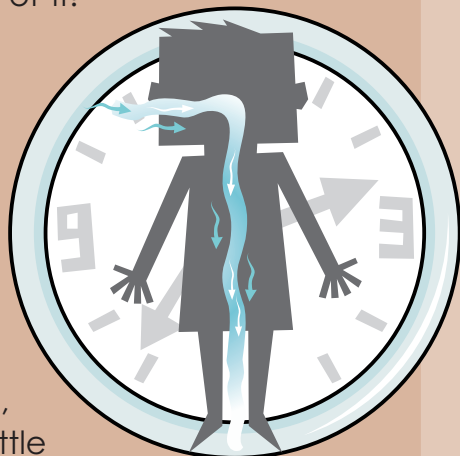
My lips are dry

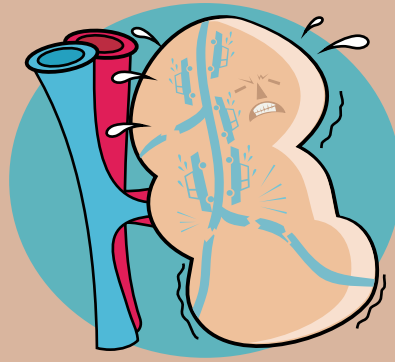
Hey, kids! Remember how it feels when you are thirsty? Your throat seems like parched with fire. Your lips crack. It feels like you are in a big stove, and a bottle of soda is all you want. It's awful to feel thirsty!



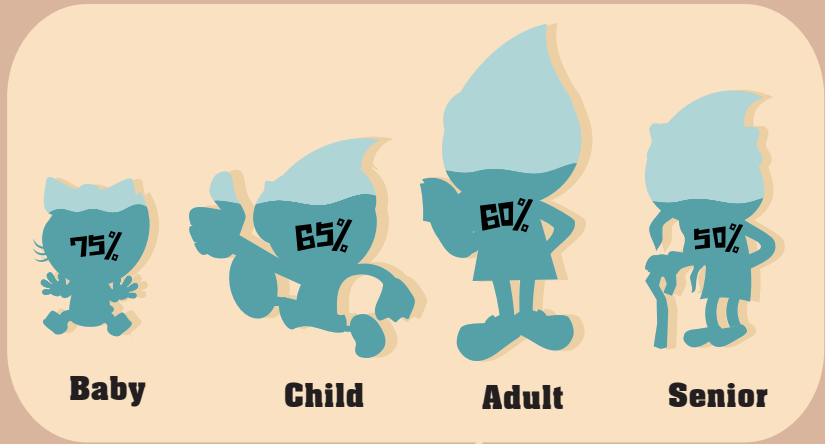
Do you know that on average kids like you have about 65% of your weight as water? That means if you weigh like 60 pounds, 40 pounds in you is water! But water does not remain constant in your body. It keeps coming in and out, and becomes less if you don't drink enough of it! That's when the thirst kicks in.

Water does critical things for us, like transporting nutrients in the bloodstream and flushing waste mainly by peeing. It also helps prevent overheat by helping you sweat, expelling heat, and cooling you down under the scorching sun. But if you keep losing water, you turn dizzy and listless, and may even pass out if you drink too little for too long! To be healthy, we generally need to take at least half a gallon of water (about eight 8-ounce glasses) every day. Just can't do without water!

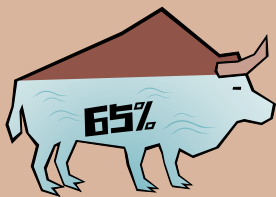




Kidneys are the transport hub inside our body. It will collapse if without adequate water intake.



How much water is inside our body through the lifetime.



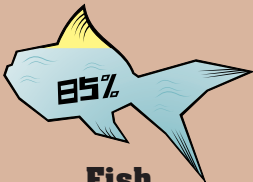
Cattle



Apple



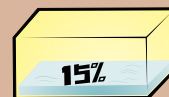
Tree



Fish



Soil



Cream

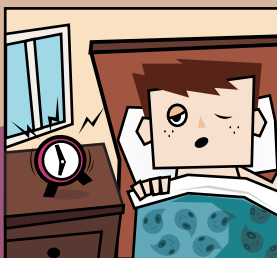
Water in six common items

Brain Workout

My day

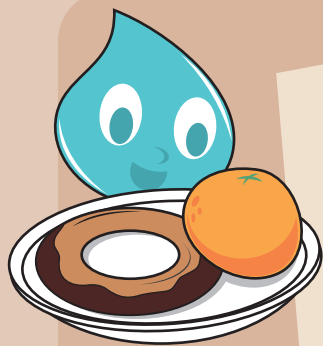
with water

THINK^{??}: When and where do you use water during the day?
Write your answers below!



I use water when...





You need water earlier in a day than you might think. Recall a fresh breakfast. Whether it is a salad of fruits, pieces of bread, or a glass of milk that you have, they all need water to grow, produce, or process. If you are careful with mouth hygiene, you would also use water to wash your mouth after breakfast...



We Can't Do Without You!

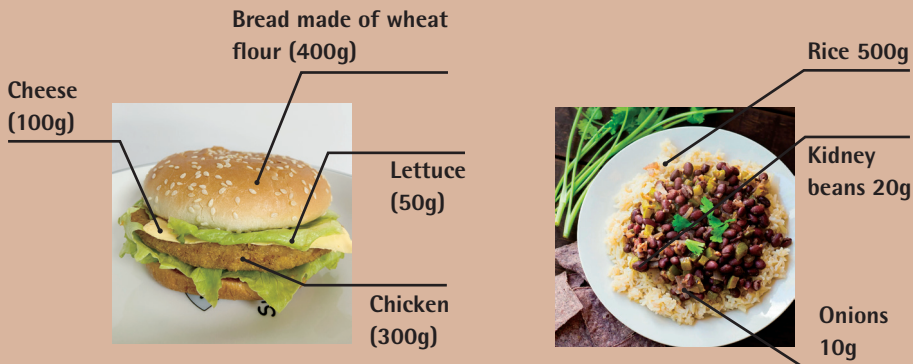
Do all our food need water to make?



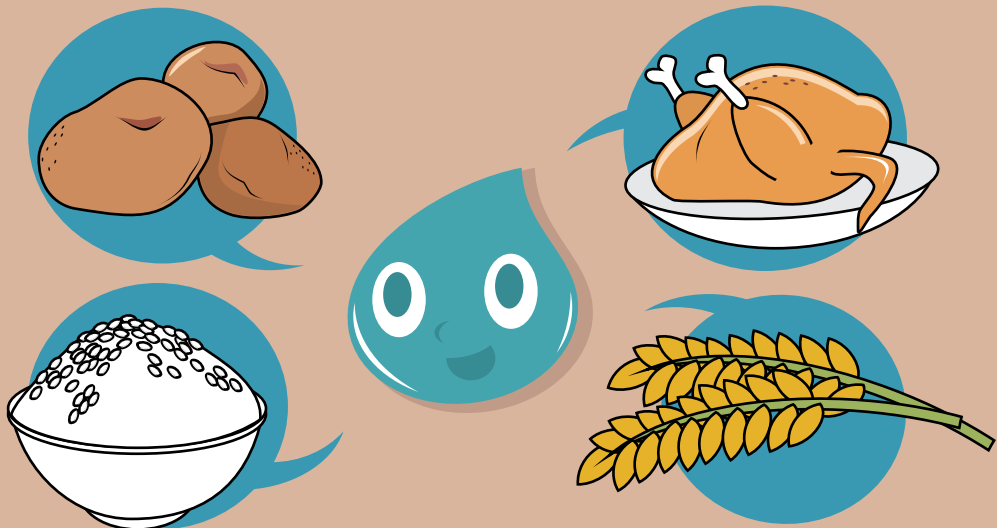
The answer is YES! You may be surprised to know how much water is needed to make our food:

- 1 kilogram of wheat need 1,608 litres of water;
- 1 kilogram of milk need 1,020 litres of water;
- 1 kilogram of lettuce need 237 litres of water;
- 1 kilogram of chicken meat need 4,325 litres of water;
- 1 kilogram of rice need 2,500 litres of water;
- 1 kilogram of dried beans need 5,053 litres of water;
- 1 kilogram of onion need 270 litres of water.

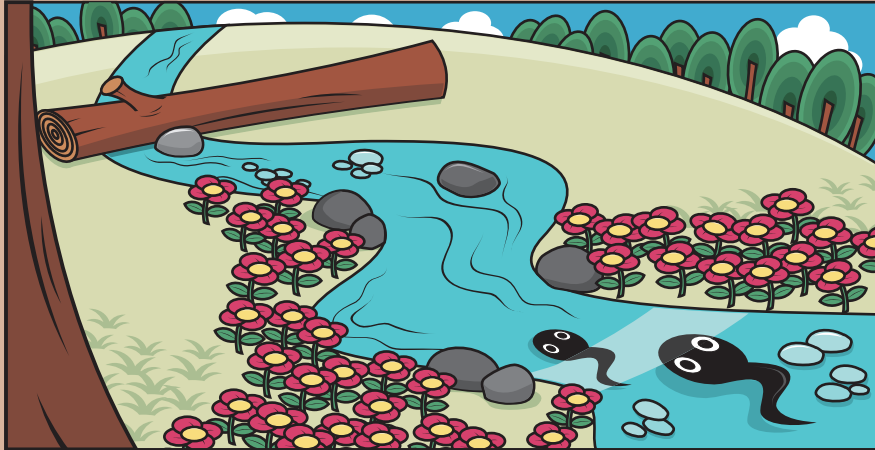
Do the math: How much water is needed to make a chicken burger or a plate of beans and rice? Find the clues in the picture below!



My answer is:



A creek in the woods



It's time to free your imagination! Picture yourself wandering in a forest, and feel with your senses how water makes the woods alive! It's better to play this game in pairs.

Blindfold one kid so that all he/she can do is to prick up the ears. Another kid leads the woody trip by reading the following text as vividly and engagingly as he/she can.

Here goes the trip...



We are at a creek in the woods. In its shallows, the creek bumps into the bare roots of a spruce tree, and it starts to whistle and bubble up. Some bubbles burst before they run long, while most of them float far far away until they run into something else big in the creek. They begin to nestle and huddle, forming a white mass of foam that you can see from afar.

The creek runs along and relaxes quietly in shallow and wide places. When it has to jostle through a narrow and steep channel, it tightens up and tumbles so fast as if it were in a hurry.

Once in a while the creek hits something so big that it has to spend

big efforts to get past it. The creek mutters and splashes itself over the unfriendly encounter with all its might. No need to fuss, the creek joyfully thinks to itself, because freedom never fails it at the end.

Basked in the sunlight, water vapors rise from the creek like a balloon of blueish green mist, lingering on the tops of lush trees and tips of slender grass. The creek runs along quietly, brushing alive all the green in the woods.

A tree lies across the creek, creating a whirlpool. A gang of shiny beetles whizz around the whirlpool mischievously, leaving behind them ripples and circles.

The creek merrily breaks into several streams, calling on each other on a game of hide and seek around the fallen tree branches. They part no sooner than they collide, and unite not long before a new round of fun is on.

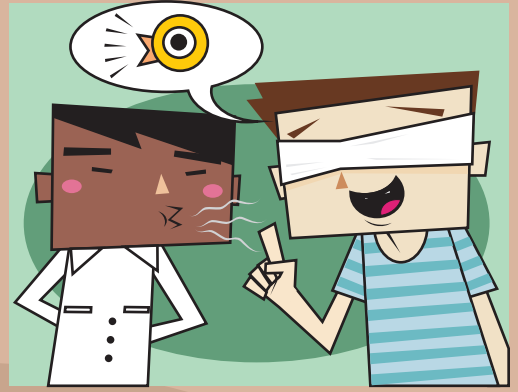
The fallen tree enjoys the company of the creek so much that it sprouts in every spring to greet the creek! "Hello you new green, and see ya!" Chirps the creek, running on from under the tree.

Now we are at a tranquil place. Shh...Listen! Somewhere nearby a grey finch is whispering and a swallow is dashing across the crisp leaves. Aren't they loud in the quiet woods!



In time the creek finds its way out of the dense woods and stretches itself widely under the big sun. A yellow flower perks up out of nowhere and a family of mature frog eggs float near the surface. You may think that black tadpoles are jumping out any

minute! Tiny blueish flies skate across the water surface. Whoops! They fall. A shiny big butterfly joins, fluttering and flaunting its bright black and yellow stripes.



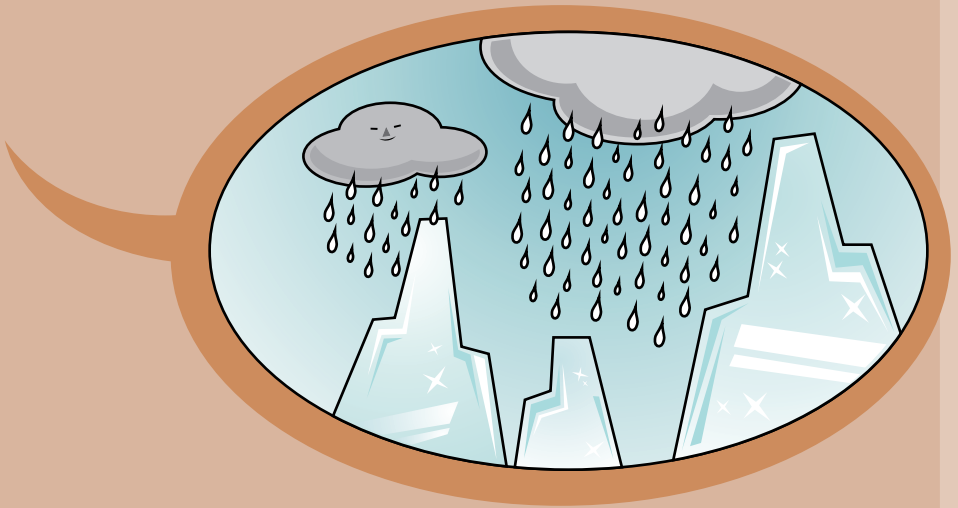
Directions:

1. DISCUSS: What scenes are described in the reading that you feel that you can touch, see, hear, smell or taste?
2. Name the items or activities that you can feel with your senses. (e.g. water flows quietly...water splashes on pebbles...tree twigs snap...)
3. Collect some items that you describe: twigs, pebbles and leaves, etc., and use them to revive these sounds. Remember: Collect. No breaking or picking the green!

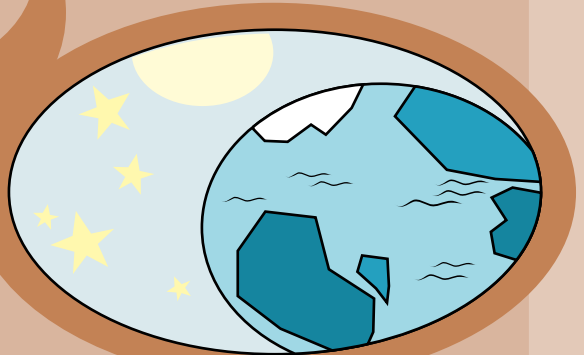
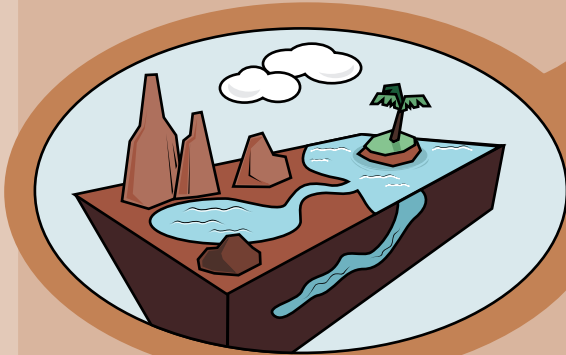


We and water

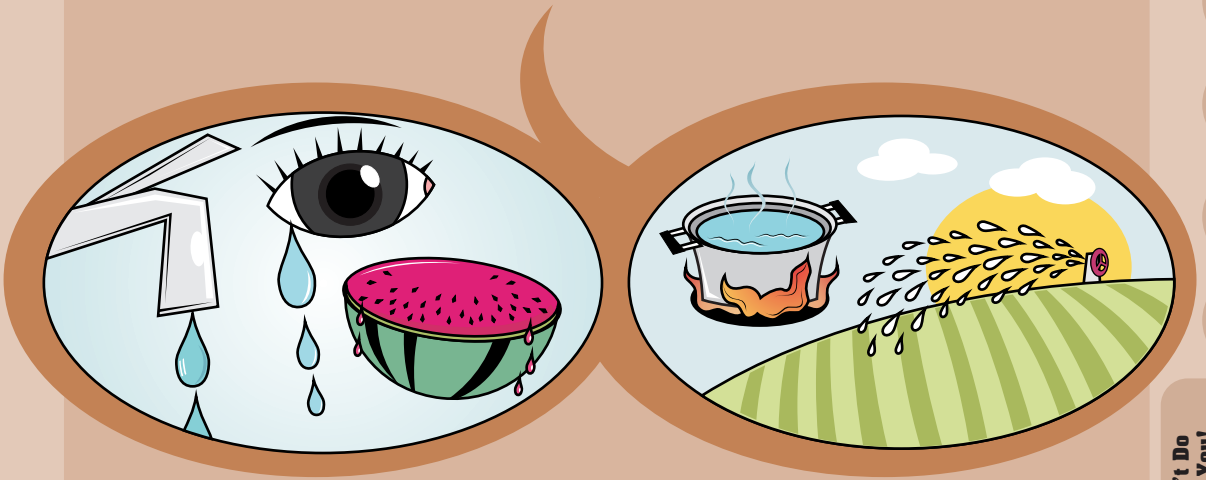
You drizzle down dark clouds, you melt off mountain caps.
You flow and tumble on land, you lie and shine in lakes.



You roar and rush from rivers to seas.
You pop out sweet in falls and springs.
You are jewels of Earth.
You are juice of Life.

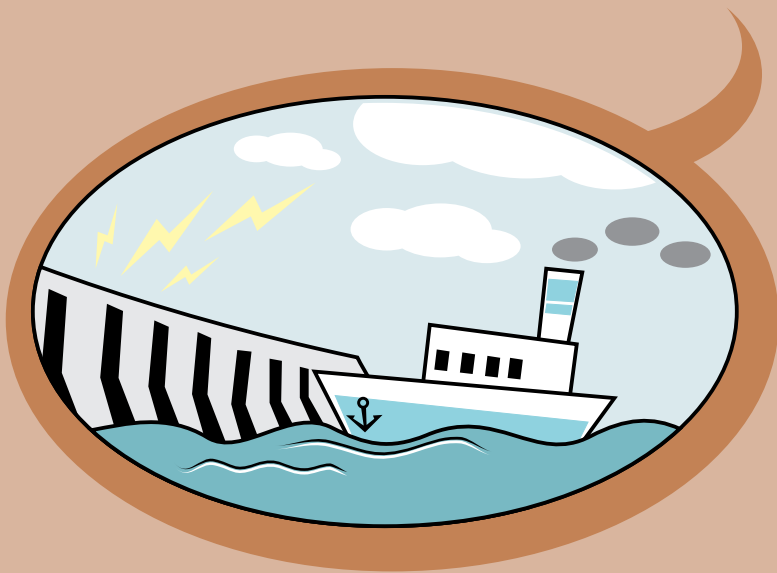


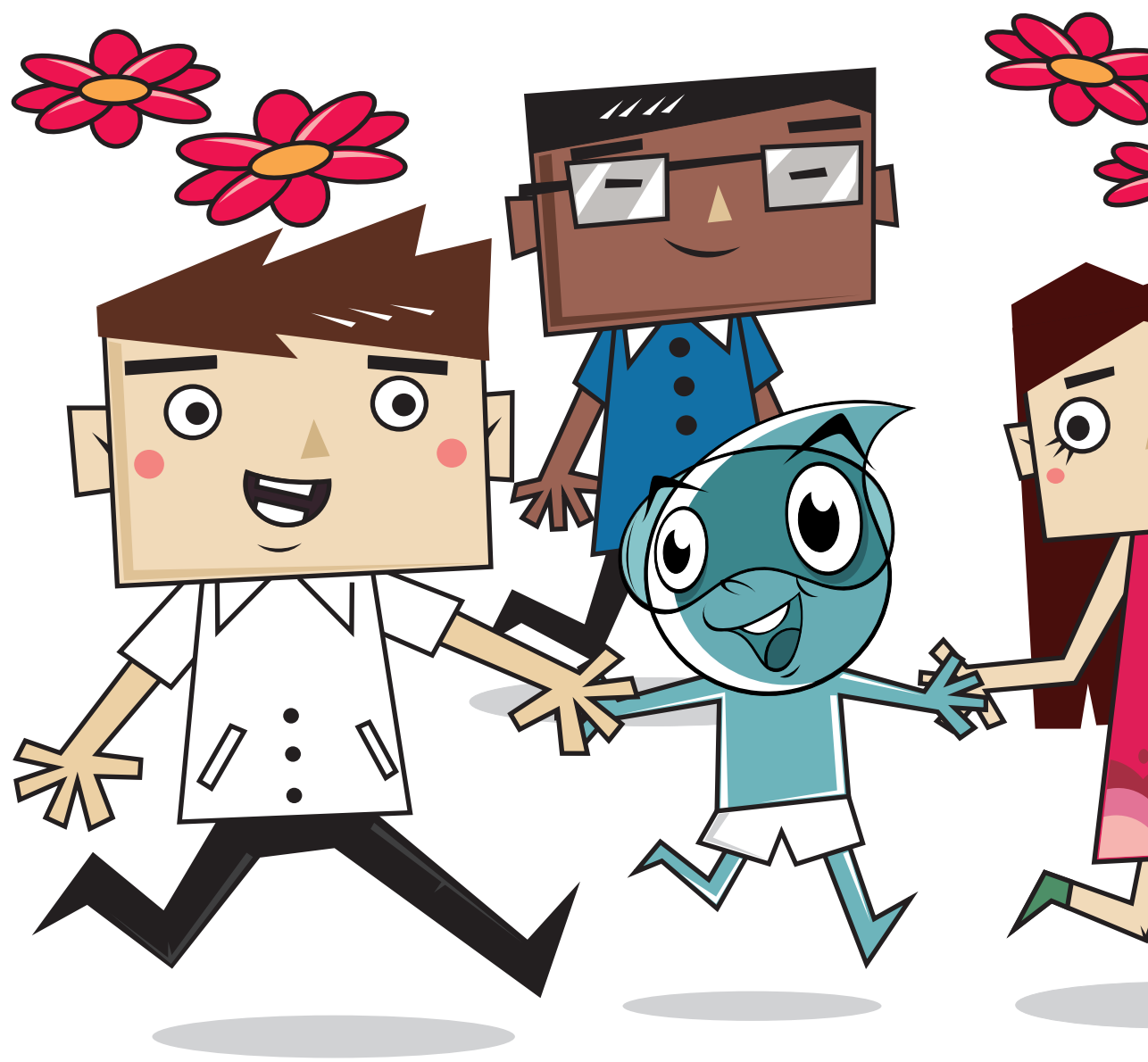
I cry with you in my eyes.
I dance with you by fountain pools.
I sweat with you off my head.
I drink with you from sweet fruits.
I open the tap,
It's you and always you!



You quench my thirst,
You clean my laundry,
You help mama cook.
You nourish crops,
You produce power,
You float boats.

You make my backyard green,
You make the world alive.
Every drop of you matters,
To me, to WE.
Save you,
Save WE!







Chapter Eight: Have Fun with Me!

**Story
Time**

The world is my
kingdom!

**Discovery
Channel**

How big is my
fist?

**Brain
Workout**

Make my own
submarine!

**Game
Zone**

Word play with
water

The world is my kingdom!

My family are everywhere in nature. No matter where you are, you can always find us. Do you believe it?

No way!

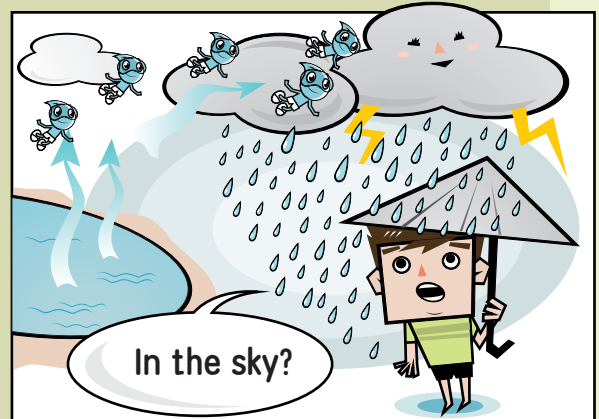
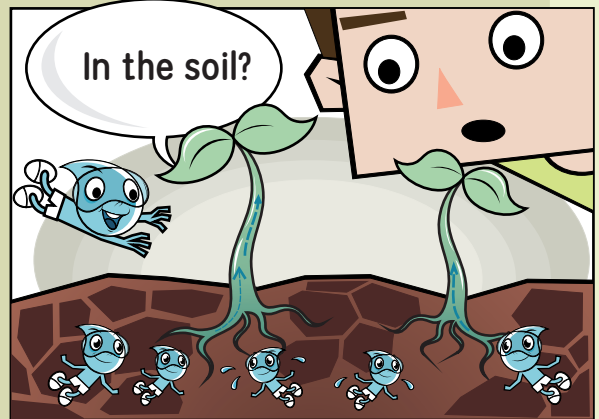
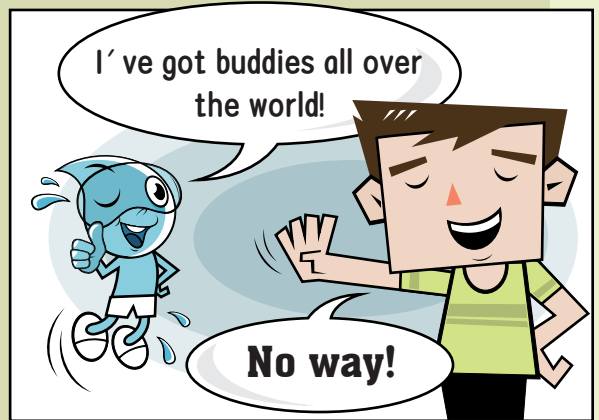
Mark my words! You name a place, and I will tell you where we are.

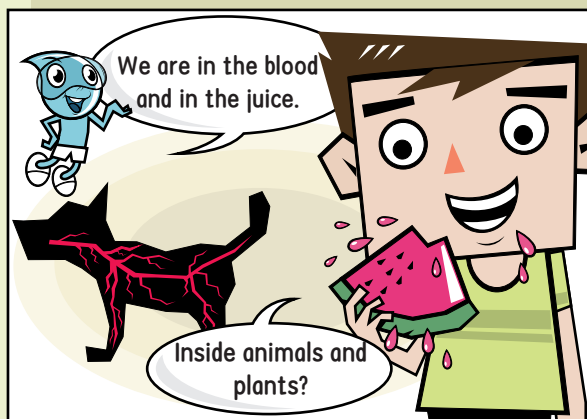
You bet I will! Okay...Are you in the soil?

Sure we are! All plants need us to grow. We fill up the pores of soil, so that plants readily take us in and grow up!

All right...Are you in the sky?

Of course! We turn from liquid to vapors by the force of evaporation, and go up and up to form clouds in the sky. When the clouds are too heavy to hold any more of us, we fall off as **rain drops**, and return to the mother land.





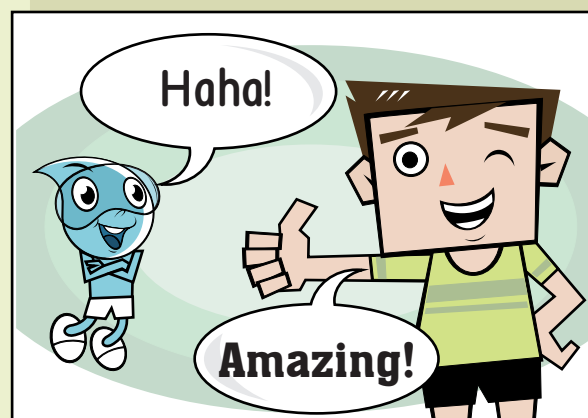
Now let me think... What about inside animals and plants?

We are in the blood and we are in the juice! Fancy a slice of watermelon in the dog days? Have a bite and you will taste me in the sweet, mellow watermelon juice! **Yum yum yum yum...**



All right, all right, that's enough! My mouth is watering! How about in the dense woods?

Don't even get me started. Beneath the lush meadows, up in the humid air, in the hustling mountain creeks, and up the tree canopies! **We are just everywhere!**



Amazing! You are indeed a big family. The world is your kingdom!

Ha-ha! You know what is even more amazing? If all of us stay together and form rivers and seas, we are powerful enough to float a gigantic cruise ship! Have you heard the story of **Archimedes and the Golden Crown?**



The legend is that King Hiero in ancient Greece once heard rumors that his crown, which was supposed to be made of pure gold, was partly replaced with silver by his goldsmith. The King commanded Archimedes to seek out the truth.

Archimedes stepped into his bath one day. As he began to lower himself into the water, the water began to spill out over the sides. The more his body sank into the bath, the more water spilled out. It occurred to Archimedes that to determine if the crown was made of pure gold, he could just observe if the crown would cause a same volume of water spillage as a cube of pure gold that had the same weight! Problem solved!



A quick-fire quiz! Can you put the six pictures below in the right order of the story I just told you?



I also know that it is called **Archimedes' Principle**: a body wholly or partially immersed in a fluid is buoyed up by a force equal to the weight of the fluid displaced by the body.



Good for you!

How big is my fist?



All objects have a shape: books are rectangular and footballs are round. It is easy to measure the exact volumes of things with regular shapes, but what about irregular shapes? Say, your fist? It is neither a cube nor a ball.

It is easy to measure the size of your fist. All you need are a few easily accessible tools. Let's try it!

Materials: A graduated container, a glass jar, a large bowl, water, paper and pen.



Directions:

1. Fill up the glass jar with water and put it into the big bowl.
2. Immerse your fist completely in the jar.
3. Be careful not to touch the bottom or the sides of the jar, nor to let water spill over the large bowl.
4. Retrieve your fist.
5. Measure the volume of water in the bowl with the graduated container. Tada! Now you know how big your fist is!



That's Archimedes' Principle in action!
How much water your fist substitutes in the jar is exactly how big your fist is.

Make my own submarine!

Brain Workout

Materials:

A small plastic bottle with cap (or boxes with lid), coins or iron nails, food coloring, water, a length of plastic tube, waterproof wax or glue, a big bowl and a large-sized syringe.



Directions:

1. Make a hole on each side of the empty box, right opposite to each other.



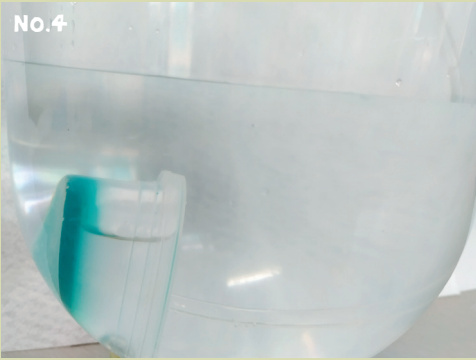
2. Insert part of the plastic tube into one hole, and use waterproof wax or glue to seal the hole in case of loose connection.



3. Put the coins or iron nails in the box as weight, so that the bottom hole always touches the water. Put some food coloring inside the box for better visual display of water movement.



No.4



No.5-1



No.5-2



4. Place the box into the bowl that is filled with water. It will start to sink as water enters through the bottom hole.

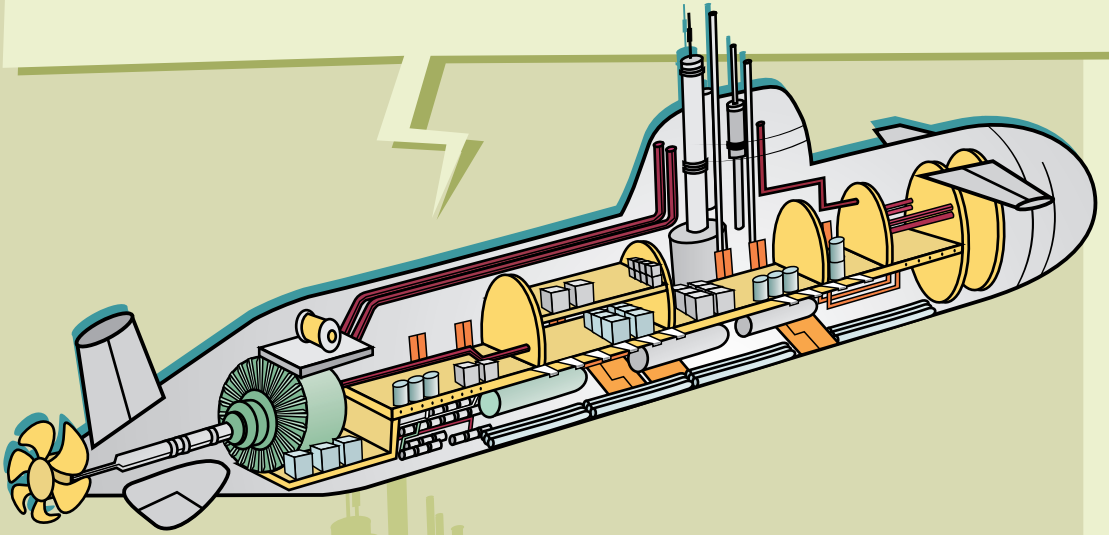
5. Use the syringe to pump air into the box through the tube. The box will gradually resurface as water is forced out of the box.

A submarine goes down or up in the water depending on the air pressure inside its body.

When you draw the air with the syringe, the air pressure inside the box decreases, water flows inside the box through the bottom hole. The box gets heavier, submerges, and floats underwater. It will eventually sink if you keep drawing out the air. When you start pumping back, the water inside will be pushed out. In this way, the box gets lighter and starts floating up!

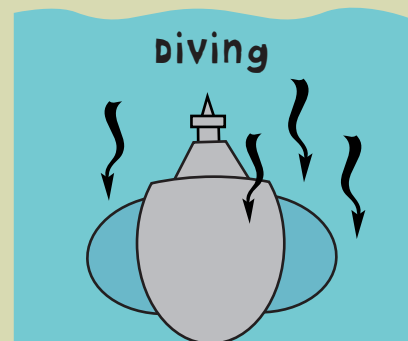


How do submarines work?



Submarines are vessels used for military purposes, research or salvage, etc. They roam underwater easily to discover the watery world. Do you ever wonder how something so heavy and huge like a submarine can remain still underwater, instead of sinking to the bottom?

The truth is, once a submarine submerges, the volume of water it displaces remains unchanged, so does the buoyancy it receives. It moves upward or downward by changing the water volume in its ballast tanks: it dives by drawing more water into the tanks, and surfaces when pumping out the water.



Word play with water

This chapter is loaded with interesting and exciting facts about water! Some of them are wittily hidden in the two word plays below.

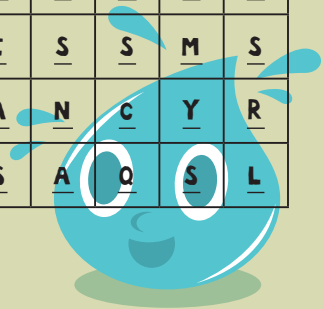
Let's have fun with them!

Game 1: Word search



Six watery words are hidden in the alphabet matrix. Find them!

H	B	Y	K	J	S	O	L	S	I	N	K	E	R	K
Z	O	F	I	T	B	U	I	N	S	X	T	P	P	I
P	U	I	S	Y	N	P	R	G	G	D	K	H	G	R
R	F	R	U	M	W	R	I	V	E	R	A	G	D	A
A	T	U	B	N	B	A	D	W	Q	E	Y	R	B	I
V	Q	P	M	R	H	A	O	J	H	S	Y	D	V	N
F	K	V	A	P	O	R	I	S	H	T	I	K	E	A
D	I	B	R	R	X	I	N	I	M	U	B	J	R	H
R	Y	I	I	V	K	D	Z	N	E	I	S	S	M	S
R	P	B	N	R	T	B	U	O	Y	A	N	C	Y	R
A	P	D	E	S	E	F	V	B	N	S	A	Q	S	L



Game 2: Unscramble the words!

Divide the class into two teams. Let's see which team unscramble the words faster!

Tips: All the words appear in this chapter. Refer to the clues on the next page if you are stuck.

No.	Scrambled Word	Unscramble it!
1	tflao	
2	ase	
3	eirvr	
4	avrop	
5	lpils	
6	dolco	
7	vied	
8	tbah	
9	rnia	
10	mreimes	
11	beiasumnr	
12	diulf	
13	etarnu	
14	yycbnuao	
15	iecju	

Clues:

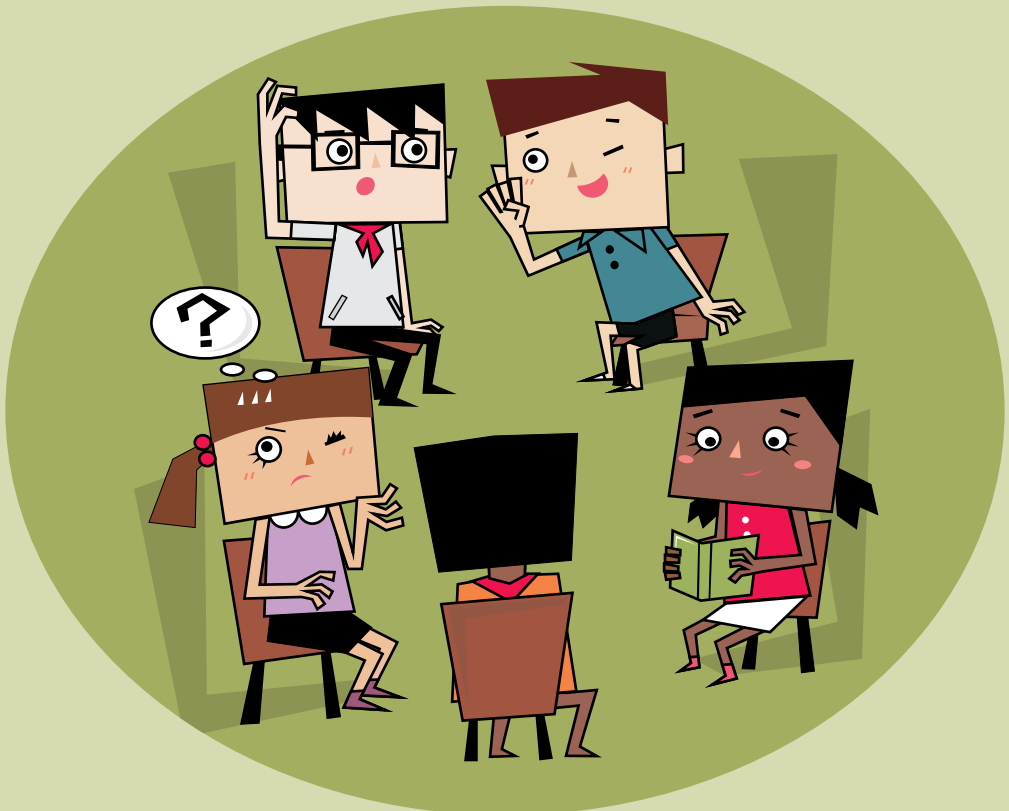
1. To cause to rest on or carried by water
2. A body of salt water, often nearly surrounded by land
3. A natural stream of water larger than a brook or creek
4. A substance in the form of gas
5. To flow or run off and become scattered
6. A mass of tiny water bits hanging high in the sky
7. To plunge into water
8. An act of washing the body, usually in a tub
9. To fall as water in drops from clouds
10. To plunge into some fluid that surrounds
11. A naval ship designed to operate underwater
12. Something that tends to flow
13. The physical world we and everything else live in
14. The power of rising and floating
15. The liquid that can be squeezed out of vegetables and fruits

Answers of Game 1: Word search

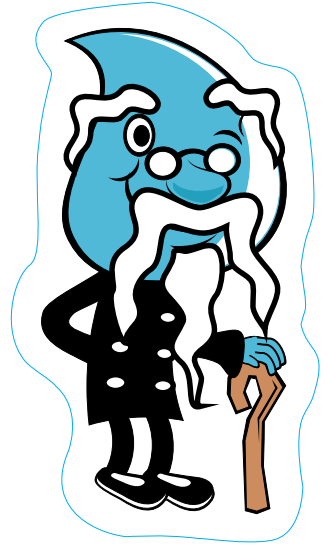
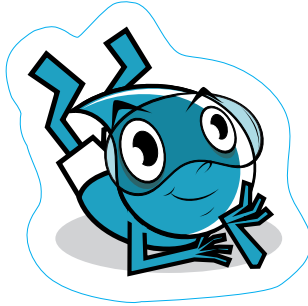
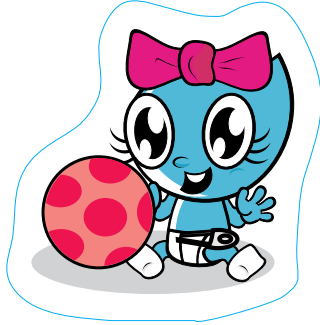
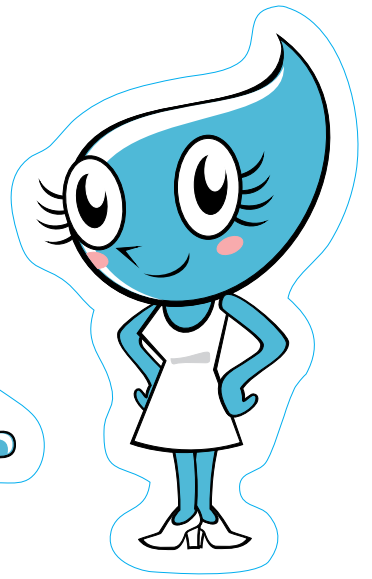
<u>H</u>	<u>B</u>	<u>Y</u>	<u>K</u>	<u>J</u>	<u>S</u>	<u>O</u>	<u>L</u>	<u>S</u>	<u>I</u>	<u>N</u>	<u>K</u>	<u>E</u>	<u>R</u>	<u>K</u>
<u>Z</u>	<u>O</u>	<u>F</u>	<u>I</u>	<u>T</u>	<u>B</u>	<u>U</u>	<u>I</u>	<u>N</u>	<u>S</u>	<u>X</u>	<u>T</u>	<u>P</u>	<u>P</u>	<u>I</u>
<u>P</u>	<u>U</u>	<u>I</u>	<u>S</u>	<u>Y</u>	<u>N</u>	<u>P</u>	<u>R</u>	<u>G</u>	<u>G</u>	<u>D</u>	<u>K</u>	<u>H</u>	<u>G</u>	<u>R</u>
<u>R</u>	<u>F</u>	<u>R</u>	<u>U</u>	<u>M</u>	<u>W</u>	<u>R</u>	<u>I</u>	<u>V</u>	<u>E</u>	<u>R</u>	<u>A</u>	<u>G</u>	<u>D</u>	<u>A</u>
<u>A</u>	<u>T</u>	<u>U</u>	<u>B</u>	<u>N</u>	<u>B</u>	<u>A</u>	<u>D</u>	<u>W</u>	<u>Q</u>	<u>E</u>	<u>Y</u>	<u>R</u>	<u>B</u>	<u>I</u>
<u>V</u>	<u>Q</u>	<u>P</u>	<u>M</u>	<u>R</u>	<u>H</u>	<u>A</u>	<u>O</u>	<u>J</u>	<u>H</u>	<u>S</u>	<u>Y</u>	<u>D</u>	<u>V</u>	<u>N</u>
<u>F</u>	<u>K</u>	<u>V</u>	<u>A</u>	<u>P</u>	<u>O</u>	<u>R</u>	<u>I</u>	<u>S</u>	<u>H</u>	<u>T</u>	<u>I</u>	<u>K</u>	<u>E</u>	<u>A</u>
<u>D</u>	<u>I</u>	<u>B</u>	<u>R</u>	<u>R</u>	<u>X</u>	<u>I</u>	<u>N</u>	<u>I</u>	<u>M</u>	<u>U</u>	<u>B</u>	<u>J</u>	<u>R</u>	<u>H</u>
<u>R</u>	<u>Y</u>	<u>I</u>	<u>I</u>	<u>V</u>	<u>K</u>	<u>D</u>	<u>Z</u>	<u>N</u>	<u>E</u>	<u>I</u>	<u>S</u>	<u>S</u>	<u>M</u>	<u>S</u>
<u>R</u>	<u>P</u>	<u>B</u>	<u>N</u>	<u>R</u>	<u>T</u>	<u>B</u>	<u>U</u>	<u>O</u>	<u>Y</u>	<u>A</u>	<u>N</u>	<u>C</u>	<u>Y</u>	<u>R</u>
<u>A</u>	<u>P</u>	<u>D</u>	<u>E</u>	<u>S</u>	<u>E</u>	<u>F</u>	<u>V</u>	<u>B</u>	<u>N</u>	<u>S</u>	<u>A</u>	<u>Q</u>	<u>S</u>	<u>L</u>

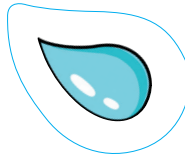
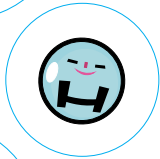
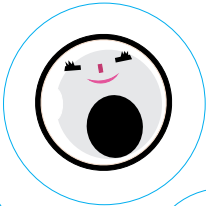
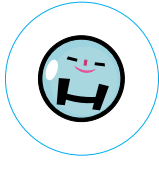
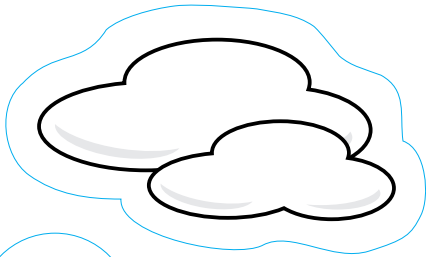
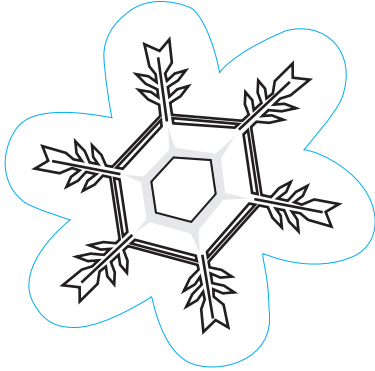
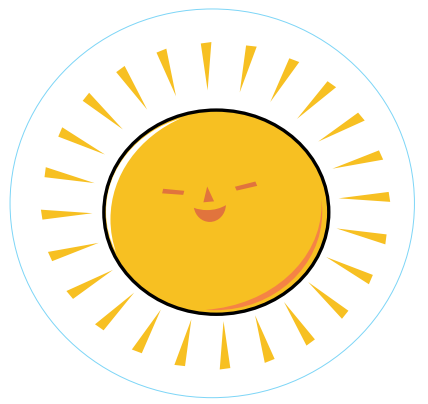
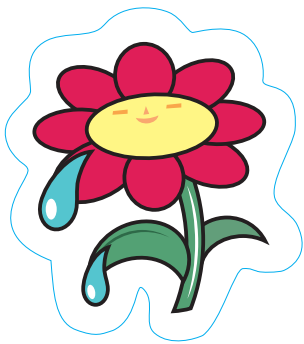
Answers of Game 2: Unscramble the words!

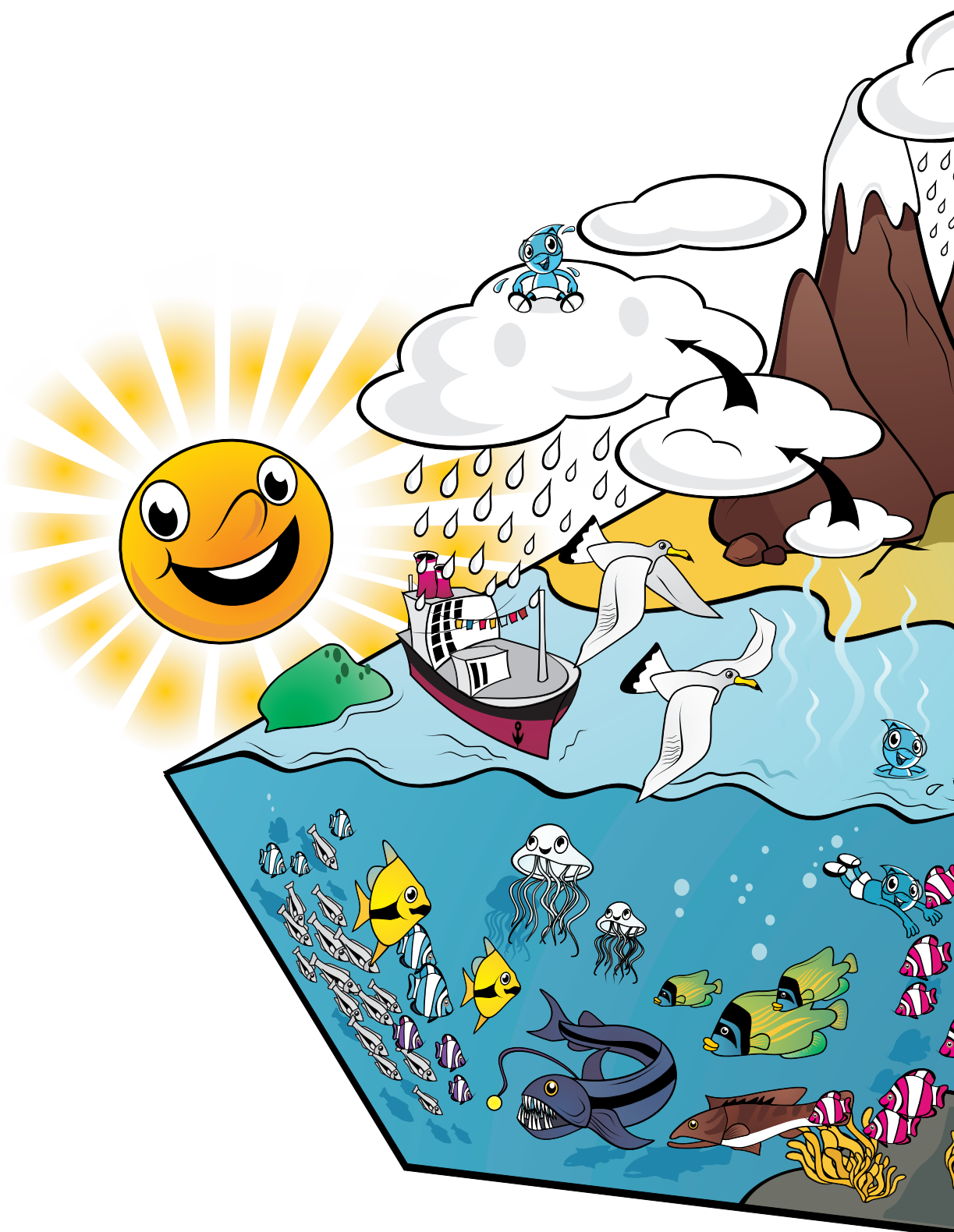
No.	Scrambled word	Unscramble it!
1	tflao	float
2	ase	sea
3	eirvr	river
4	avrop	vapor
5	lpils	spill
6	dolco	cloud
7	vied	dive
8	tbah	bath
9	rnia	rain
10	mreimes	immerse
11	beiasumnr	submarine
12	diulf	fluid
13	etarnu	nature
14	yycbnuao	buoyancy
15	ieclu	juice















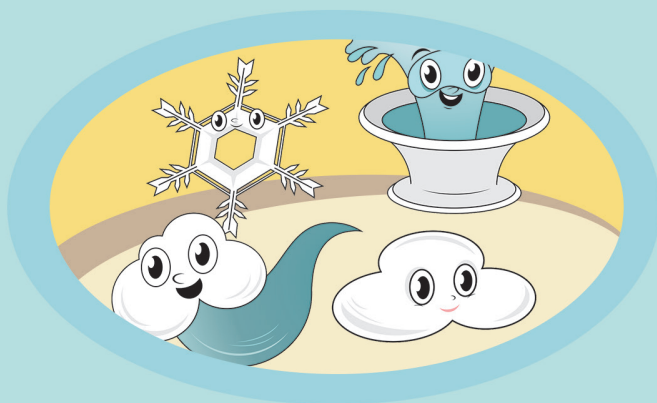
WATER EDUCATION FOR KIDS (AGE 3-7)



WATER EDUCATION FOR CHILDREN (AGE 7-12)



WATER EDUCATION FOR TEENAGERS (AGE 12-16)



ISBN 978-7-900282-87-3



9 787900 282873 >

定价: 8.00元



China Institute of
Water Resources and
Hydropower Research



United Nations
Educational, Scientific and
Cultural Organization



Intergovernmental
Hydrological
Programme