Hello World Kids

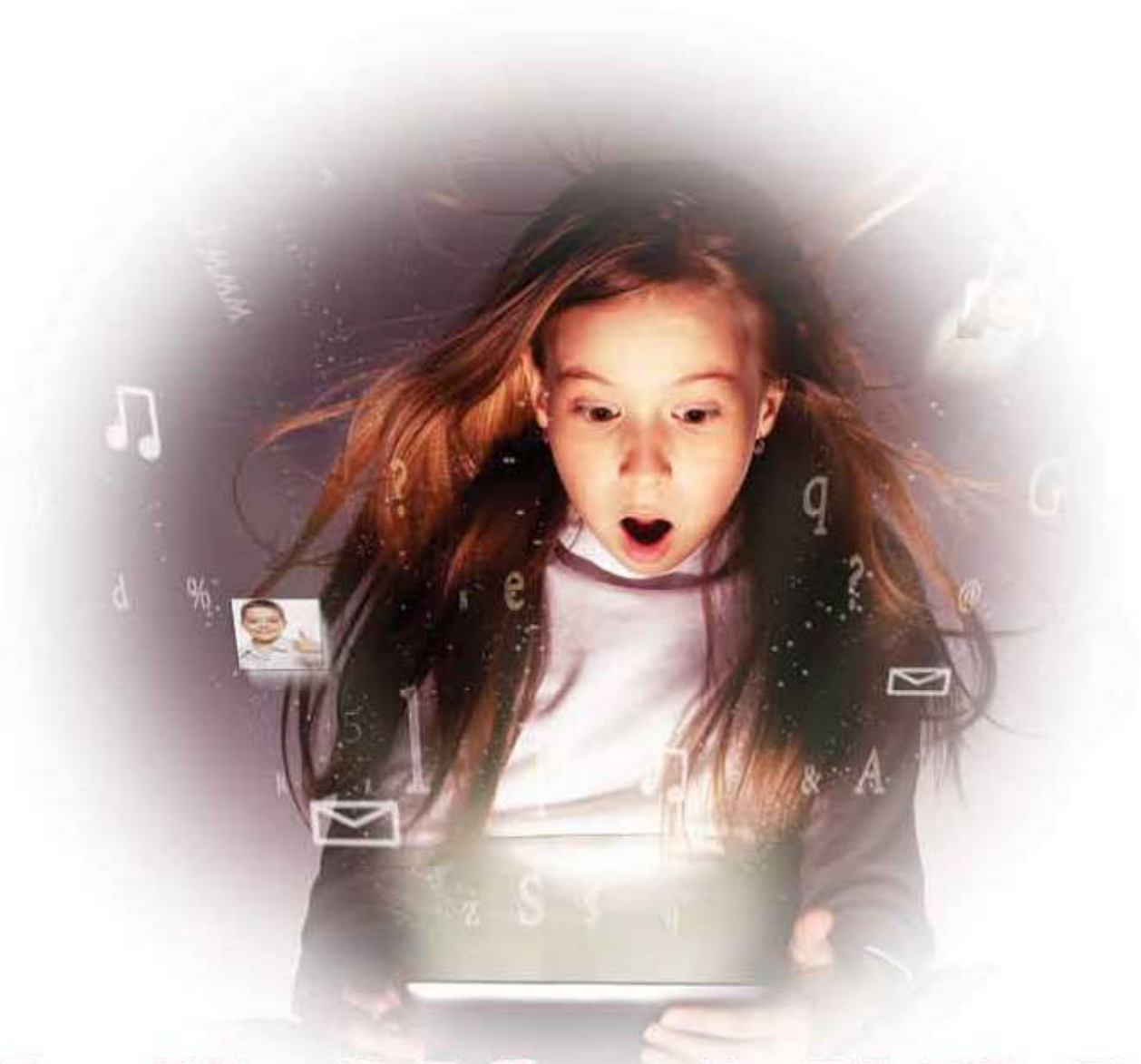
A whole new world of possibilities

HelloWorldKids

Programming

By: Hanan Khader

Level 1



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Edition 2016
Register No. 123/1/2015
ISBN: 9781785820021

Hello World Kids Organization
Publishers & Distributors
P.O.Box: 230196, Amman 11123, Jordan
http://www.helloworldkids.org

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Introduction

The world is emerging into technology. Programming is a unique way to create and enhance technology world-wide. Software has become so critical in our lives, a thing we cannot ignore or stop. For little kids, programming teaches them how to see things differently, think of innovative ideas, and practice logical and computational thinking. Computational thinking is so important in every aspect in life; science, math, language...etc. When it is absorbed by kids in the process of learning how to program, it helps them find solutions for complex problems by breaking down these problems into smaller ones and solving each one on its own. This at the end enables them to come up with unique solutions for big problems faced in our lives. Through our «**Hello World Kids**» curriculum, we teach kids how computers think, and how we (humans) can order computers and make them obey our commands.

Hello World Kids Curriculum consists of several levels. It gradually teaches the concepts of programming to little kids. The program aims to build kids' knowledge of code writing through the correct way of programming. The information in it is represented in a catchy, interactive and child oriented way. The kid starts at the junior level.

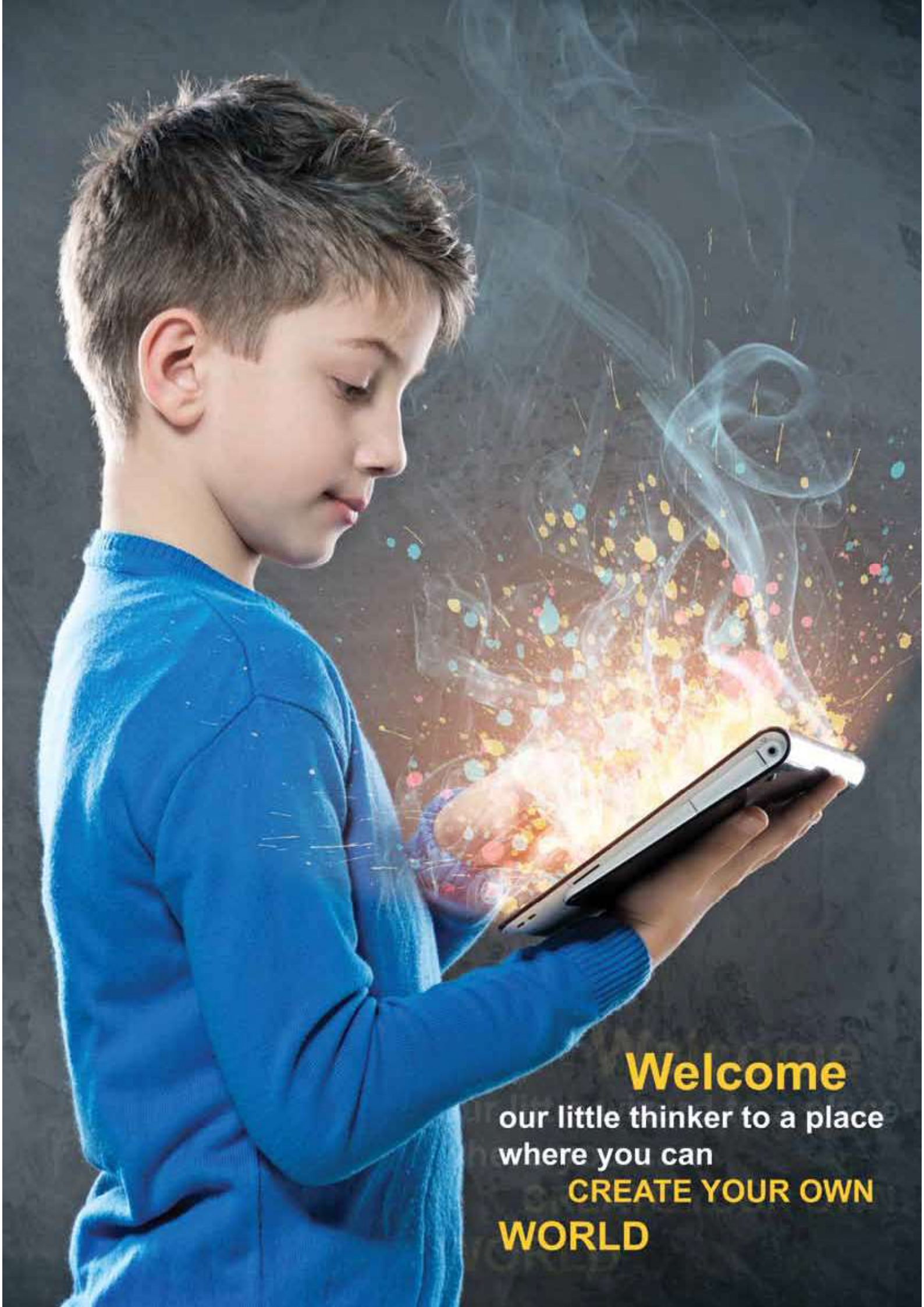
A **HelloWorldKids** Junior programmer is able to create fun programs that draw, play music and do motions. SmallBasic programming language is used in this level.

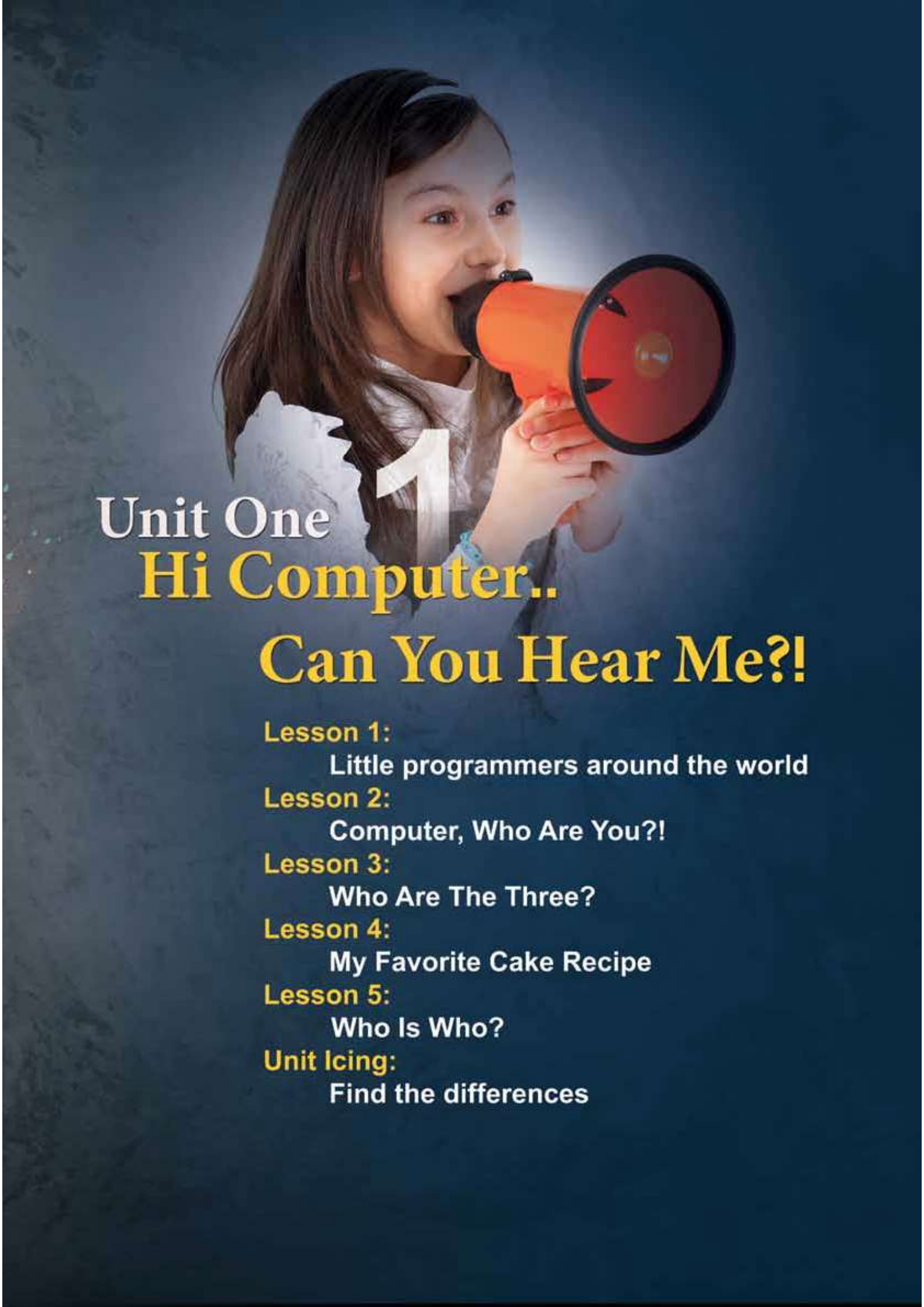
HelloWorldKids series come as a belief that children are great potential that needs to be invested. They have the ability and creativity to be CREATORS, to be PROGRAMMERS.

We are determined to instill ambition in these young kids, unleash their potential and widen their horizon. We believe that kids are promising seeds. You only need to know how to nourish those seeds in the perfect fertile soil to grow to be a fruitful garden.

We are sure that **HelloWorldKids** would make manuals for great entrepreneurs, whom with no doubt, will make a difference all around the world.

This book is dedicated to the Scientists and Programmers of the future. Even if it was a single fingerprint in those who would change the world!


Welcome
our little thinker to a place
where you can
CREATE YOUR OWN
WORLD



Unit One 1

Hi Computer.. Can You Hear Me?!

Lesson 1:
Little programmers around the world

Lesson 2:
Computer, Who Are You?!

Lesson 3:
Who Are The Three?

Lesson 4:
My Favorite Cake Recipe

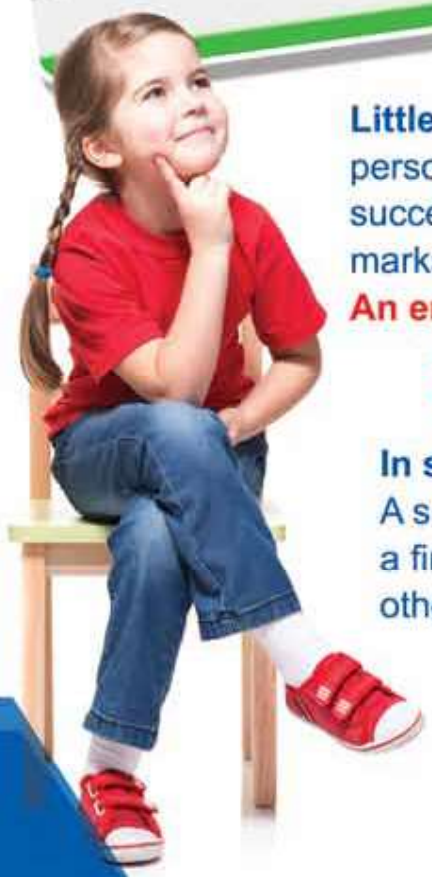
Lesson 5:
Who Is Who?

Unit Icing:
Find the differences

Lesson 1 Little Programmers Over the World

Do you know who these in the picture are?
They are one of the world's youngest programmers, Shravan and Sanjay Kumaran.
They became famous for establishing a company that creates games and learning software for mobile phones.
They say they are so happy that their friends at school enjoy the games they have invented!
The Kumaran brothers are also considered entrepreneurs.
Do you know who an entrepreneur is?

Entrepreneurship is a great concept that you need to learn.
Entrepreneurship provides the skills that people of every age will need to be successful in our ever-changing world.
You will need these skills for a happy, confident and adventurous life.
Start by spelling it correctly with your teacher and let us learn more about it.

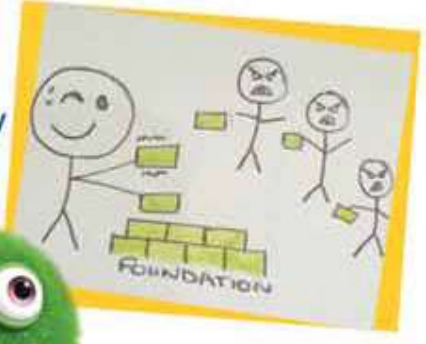


Little wizard, an entrepreneur is a noun that describes a person, who has special characteristics and skills. Usually successful business people are entrepreneurs. Now, what marks an entrepreneur? Let's see together.

An entrepreneur is

a person who sees problems and obstacles as opportunities.

In simple words the saying says:
A successful man is one who can lay a firm foundation with the bricks others have thrown at him.



An entrepreneur is a person who never gives up or quits.

Entrepreneurs keep trying new ways until they succeed.

"I have not failed. I've just found 10,000 ways that won't work."

Thomas A. Edison

Entrepreneurs are so brave, they are Risk Takers.

Take Risks: If you win, you will be happy; if you lose, you will be wise.

Class discussion 1

Little thinker, do you consider yourself an entrepreneur?
If yes, tell us why.
Think of people around the world that you see as entrepreneurs?
Let us know what makes them entrepreneurs.

Lesson 2 Computer Who Are You?

Dear little thinker, do you use a computer?
What do you use it for?
What is the computer? Would it be a useful object if the power is off?

Young programmer, the computer is usually an electronic device that can store, retrieve, and process information.
But without your commands, a computer is just a piece of steel!

Do you know what makes computers one of the world's greatest inventions?

First, the computer's **speed** is incomparable. In other words, no human being can compete with processing complex information and calculations faster than a computer!

Second, have you ever entered a mathematical equation in a calculator and the result was wrong? Of course not! Computers have outstanding **accuracy** even in the most complex calculations.

Third, Computers also can **store mass storage** of data

Finally, compared to humans a computer **doesn't get tired.**

Can you think of other super characteristics of the computer?

Where can I find computers?

Our young programmer,
do you know that most electronics have **Computers?**

Calculators, PlayStations, and even washing machines have computers but each has its own purpose.

Class activity

Choose 3 of your favorite computer/mobile games that you wish to make your own version of it.

Lesson 3 Who Are The Three?

Little thinker, have you ever thought of how programs are made?
Have you ever wondered how can you create your own game?
Let's say your brother has an idea for an awesome game.
How can this idea be transferred into a real game?
To know how let us learn about the three parties in the programming process.

Who Are the Three?!

1. The programmer: This is the person who creates the program.
2. The program: The application or the game, that the programmer has designed and wrote the commands to make it function.
3. The end user: The user(s) who are going to use, or benefit from the program.

If you want to make a game for your young brother in this case the three parties are:

1
The programmer
(YOU)

2
The program

3
The end user
(Your brother)

Just like everyone on this planet has their own language, computers have their own languages too. They are called **programming languages**.
YOU are going to learn a programming language.
It is the way to order your computer, and create your program as you wish.

There are many programming languages around the world. Here are some of the most popular ones:

1. Java
2. C++
3. HTML
4. C#
5. PHP
6. SQL
7. Java Script

To better understand what the programmer does, think of a translator!
What does a translator do?
These two girls need to talk to each other, but there is a problem.
They speak different languages. What's the solution to their problem??
Mmmm, Oh yes, they need a translator ☺

My name is Chanda.
I am from India.
I speak Urdu.

My name is Miyoko.
I am from Japan.
I speak Japanese.

Hello, my name is Samir.
I speak both Urdu and
Japanese. I will translate
for Chanda and Miyoko.

Just like Samir, The programmer is a Translator too!

The programmer
(YOU)

They talk to YOU

All the people
who wish to use
your program.
That includes you too!

You talk to the computer

They use the computer

Lesson 3 Who Are The Three?

Unit Exercises

Let's say that you heard that your uncle, who works as a taxi driver, complaining of the traffic jam he gets stuck in during his work. You are determined to help him, and came up with an App that helps your uncle and all the taxi drivers in your city.
The App shows the status of the streets, enabling them to avoid ones which are jammed.
Write down who are the three parties in this case and come up with a name for the App.

Searching Challenge

Do you have any idea how many programming languages there are until now?
Surf the internet to find out.
Look for other programming languages and share them with the class.

Lesson 4 My Favorite Cake Recipe

Little thinker, you are in the kitchen with your mom making a very delicious cake. This is the first time you have ever made a cake. With the help of your expert mommy, you prepared all the ingredients.

Flour, Eggs, Milk…..etc.

Mom: Dear, your brother is crying. I'll go check him. Please break some eggs in the bowl.

You: Okay mom.

The whole tray in front of you

The first egg, second one, third ……

5 minutes later >>>>>> the whole tray is in the bowl!!

Mom: OOHH, the cake is ruined! You have broken all the eggs in the tray. That is not correct! The recipe says we only need 4 eggs!

You: Oh mom you didn't say so... You should have mentioned that from the beginning!!

Well Well Well our little programmer, the cake recipe is just the same as programming! You should be very precise when ordering the computer.

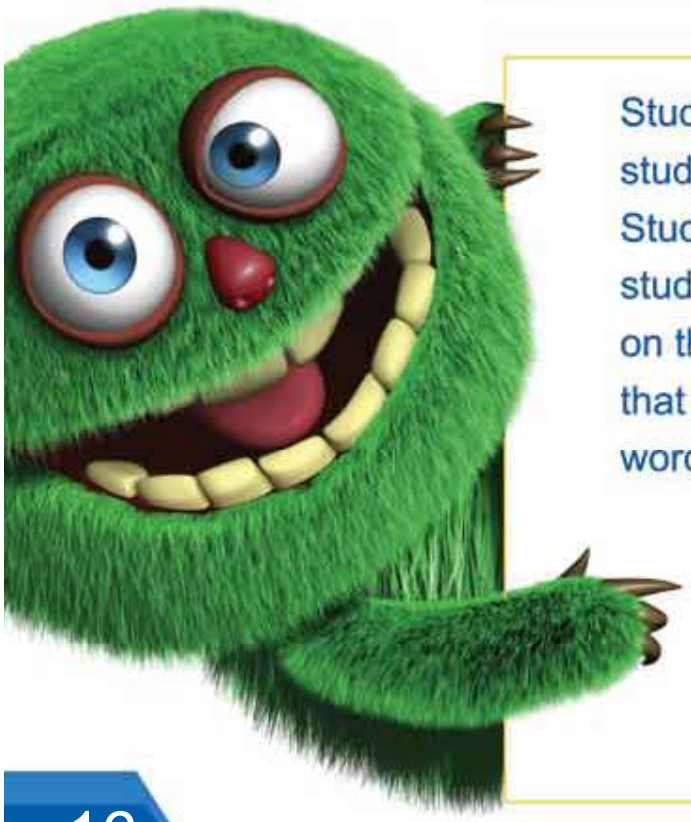
My Favorite Cake Recipe

Class discussion 2

In pairs, two students should draw a square on the ground.

Student B

Student A



Student A should be the programmer and student B should be the computer. Student A (the programmer) must order student B (the computer) to draw a square on the ground as he moves. Let's assume that our computer only understands two words: Move and Turn.

Remember:

You must be very precise!!

Lesson 5

Who Is Who..
Steve Jobs

- Mom, why does your laptop have a picture of an apple on it?
- Well dear, it's the logo for the Apple Company.

Steve Jobs came up with it.

- Steve Jobs?
- Yes, you do know him, don't you?
- Mmm I might have heard about him. Tell me about him please.
- Steve jobs was one of the best entrepreneurs, he's the one behind Apple Company.
- Ahaaaaa
- His name is Steven Paul Jobs. He was born on February 24, 1955.
- So he is the same age as grandpa?
- Well, he passed away, but yes. If he were alive, he'd be the same age as your grandpa.

One of Steve's favorite hobbies was working with electronics in his garage with his dad. They would take apart electronics like radios and then put them back together. When he was thirteen he met Steve Wozniak. They became friends as Wozniak was also into electronics. The boys used to spend time at job's garage. In 1976, they formed the company Apple Computer and called their first computer the Apple I. They began making the computers in Jobs' garage. Jobs was just 21 years old at the time.

Wozniak then started working on the next version called the Apple II. The Apple II was a great success. The company quickly grew and went public just four years after it started in 1980. Other companies that produced PCs emerged which were much cheaper than Apple 1 & 2, and that caused sales to decline. Job's was blamed and he was fired of the company he established with his brilliant and hard work!!

Lesson 5

Who Is Who.. Steve Jobs

- What? Fired? After all this impressive work? That is so devastating
- Yes, it is devastating but Jobs never gave up. He continued his hard work until he succeeded. Jobs started a new company called NeXT Computer.

The first products from NeXT were great, but too expensive for the average person and NeXT began to lose money. Jobs then turned NeXT into a software company and it began to have some success.

- Coooool he kept on working!!
- Yes He did. In 1997, Apple ended up purchasing NeXT from Jobs. He then returned to the company as the CEO. Apple was struggling at the time and needed some new ideas. With Jobs, Apple began to produce new products. They introduced the iPod music player and iTunes music software.

In 1997, Apple ended up purchasing NeXT from Jobs. He then returned to the company as the CEO. Apple was struggling at the time and needed some new ideas. With Jobs, Apple began to branch out into new products. They introduced the iPod music player and iTunes music software. In 2007, Apple introduced the iPhone which changed the way phones were used. Jobs became a celebrity and was considered by many to be one of the great innovators of the 2000s. Steve Jobs died on October 5, 2011 from pancreatic cancer. He had fought cancer for several years since first being diagnosed in 2003.

- Oh wow, his story is very inspiring. I really enjoyed it.
- Good, what did you learn from it?
- First, I think you should never underestimate yourself. Even when you are young, you can achieve great things. I loved how Steve Jobs kept trying and never gave up in spite of all what he had been through in his life.

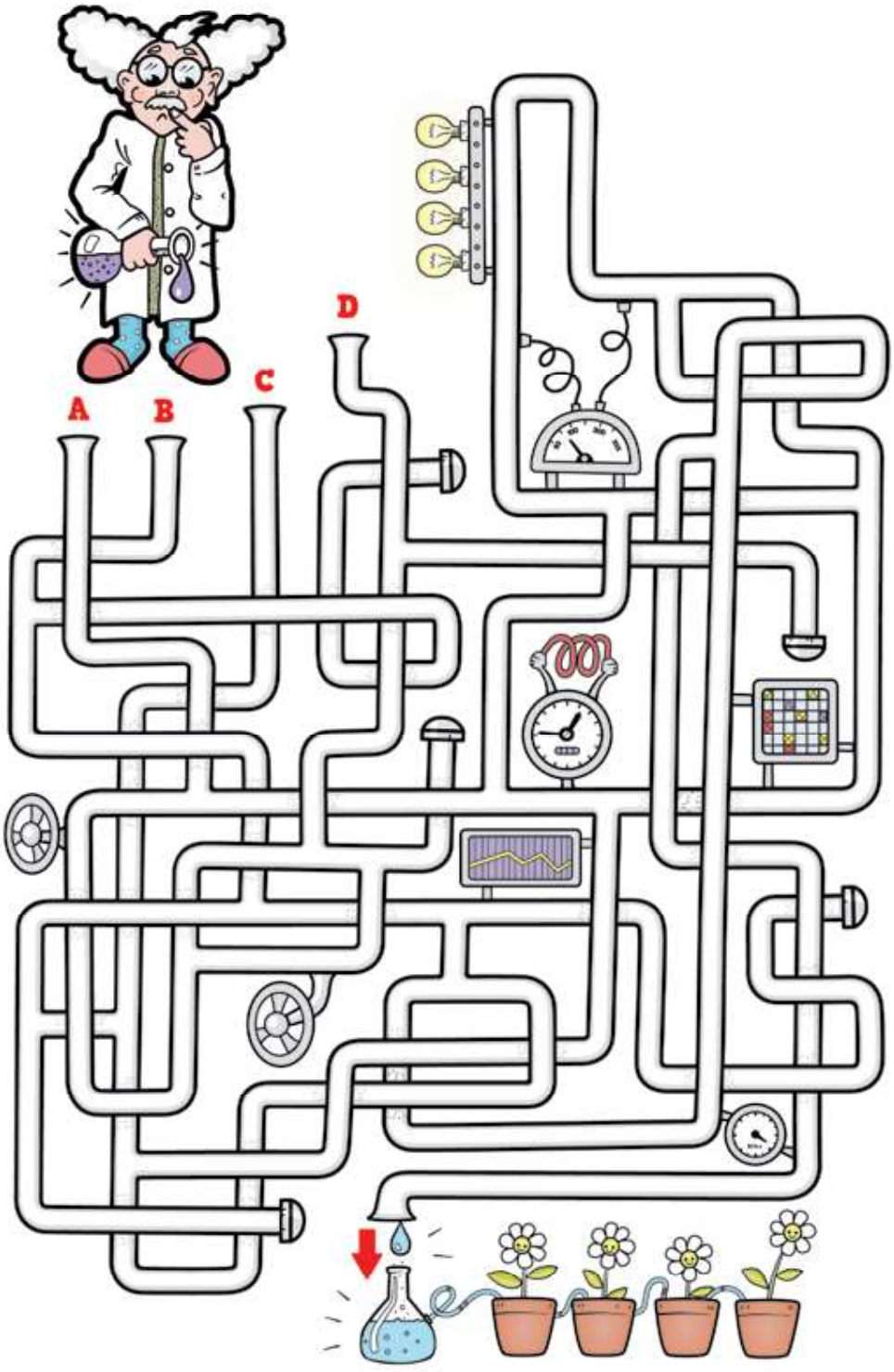
Source: Wikipedia

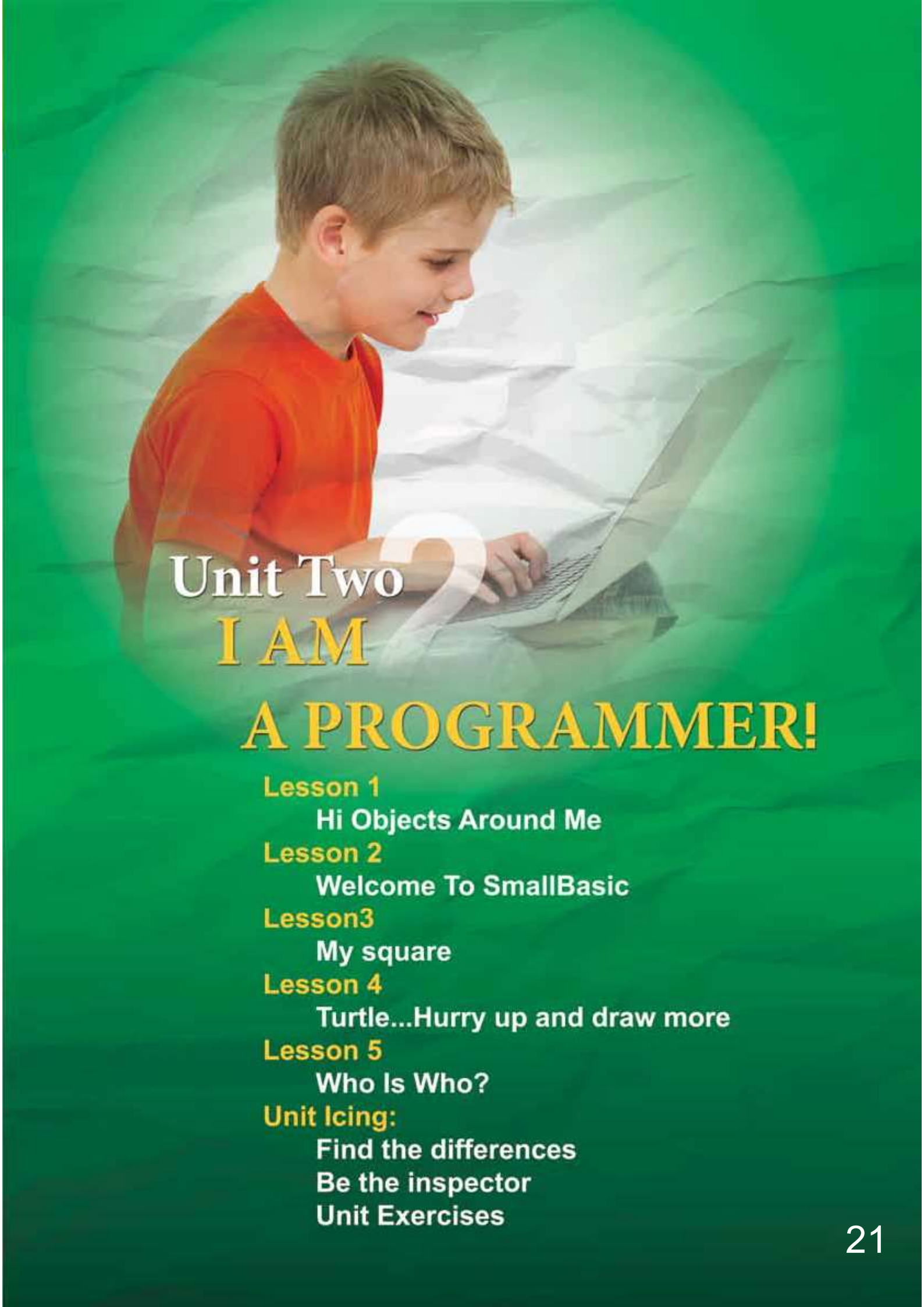
Scratch Your Head!

Find the differences between the 2 pictures:

Laboratory Maze

Find the correct tube?





Unit Two
I AM A PROGRAMMER!

Lesson 1
Hi Objects Around Me

Lesson 2
Welcome To SmallBasic

Lesson3
My square

Lesson 4
Turtle...Hurry up and draw more

Lesson 5
Who Is Who?

Unit Icing:
Find the differences
Be the inspector
Unit Exercises