



SALT Guide

ICT and how it works

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Version	
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1 Introduction

Children are already interested and engaged in using technology. This creates many amazing opportunities for both students and teachers to have effective teaching and learning.

The main aim to use ICT in the classroom is to enhance motivation within the students and the need to explore more whilst learning at their own pace. This interesting tool helps learners built their creativity and collaboration skills and it also gives space for critical thinking, problem solving and creativity, thus developing the 21st century skills.

The use of tablets are also beneficial for special needs students and children with dyslexia. Teachers can adapt work or provide different activities according to their ability and needs.

2 Aim of the lesson

The objective of such lessons is for children to be active learners and participants. By using different Apps and Web 2.0 tools on their tablet, students will be able to interact completely with each other, take part in discussions, share their opinion (no matter their communication skill level), create projects and do their own research.

At the same time the students are developing their problem solving skills, they are being more creative and they are thinking in a critical way. Moreover, they are enhancing their digital literacy skills whilst building up their life skills such as leadership and socialising.

In this way, children are learning Maths, Science, Languages and other curriculum subject in a fun and appealing approach.

3 ICT in the Classroom

3.1 Creative writing and Reading Comprehension using the Tablet

By using different Apps on the children's tablet, the teacher is able to teach different literacy skills such as creative writing and comprehension. From a simple interactive quiz which gives each student immediate feedback to planning and writing animated stories.

With this approach, the students are eager to learn and are more attentive when it comes to reading comprehensions as they take the quiz very seriously. Whilst for the creative writing, seeing their imagination coming to life, motivates them even more.



This method also lengthen their attention span and enhances collaboration while sharing ideas.

3.2 Numeracy and Literacy using tablet devices

Tablet devices can be powerful tools for improving literacy and numeracy outcomes. The combination of engaging tasks such as educational games, multi-sensory input and immediate feedback from quizzes and interactive handouts can be highly effective in helping students meet the curriculum requirements.

Students are provided with digital libraries from which they can choose books according to their level. Pupils with low ability level of reading can choose the option of listening to the book being read to them.

The aim is to increase independent and self-initiated learning among students even with special needs students.

3.3 Introduction to Robotics and Coding with Lego WeDo

This project-based learning session which is also referred to as learning by doing is the key to student understanding. Since children learn by doing, building robots and programming them using the Lego WeDo will teach them a lot of things like Maths, Science, Art, Geography and Languages.

This Robotics session provides the students with building instructions of interesting constructions and models. These kits offer the opportunity for students to learn in a fun way the creativity and critical thinking skills necessary for future success. They provide a wide array of educational opportunities across subjects and can lead to STEM projects.

The LEGO WeDo 2.0 follows the 4 C's process which are:

- Connect to a story
- Construct a model
- Contemplate its function
- Continue improving its design



3.4 LEGO Mindstorms

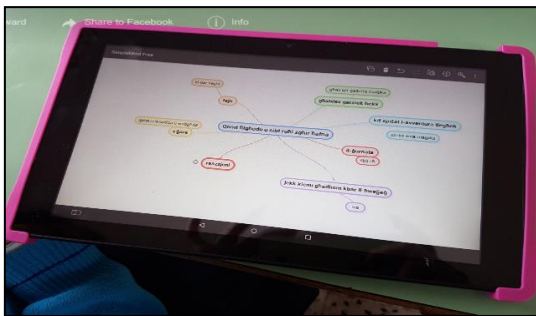
This workshop that is held in Malta's Science Centre, is very similar to the LEGO WeDo 2.0. They have the same benefits. The LEGO Mindstorms offer the students to explore programming more in depth. They will also develop their design and computational thinking skills. It includes many cross-curricular opportunities that can impact other subject areas such as Science, Mathematics, Engineering, Design and Technology.

Through this workshop, students are also engaged with real world topics, They are given problem solving activities which focuses on STEAM learning. With such practices, students are being prepared for their future.

4 How they work

4.1 Creative writing and Reading Comprehension using the Tablet

A brainstorming activity at the beginning of the lesson is held to check for understanding. Each child uses the Answer Garden installed on their tablet. With this App all children are able to participate as their writing is anonymous. Their responses will instantly form a growing word cloud and are displayed on the class monitor for classroom feedback.



Students then plan their writing using the Simple Mind App. It helps them organise their thoughts and ideas for writing.

At the end of the creative writing process students publish their work by typing in their writing. Depending on the type of writing, they choose which app or Web 2.0 tool to use.



If they are writing a story, they can use J2e, Sway, Author, Story bird and Book Creator. For short writing tasks such as posters, adverts and invitations they use the Pic Collage and for writing instructions they can use the Photo Story. With the latter they can create short video stories by using a mixture of images and words.



The use of tablet caters for the different abilities in the classroom. For the lower ability students, the Pic Say app is an effective tool as the children can label pictures instead of writing sentences.



Kahoot quizzes and Quizziz are very popular with students because they engage them fully to the lesson being held. These kind of quizzes are very essential during comprehensions as immediate feedback is given to individual students.

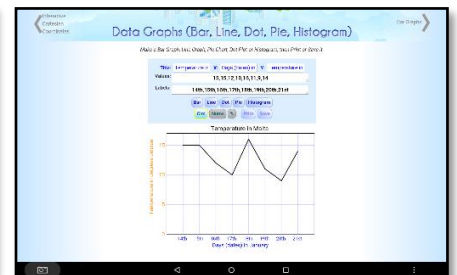
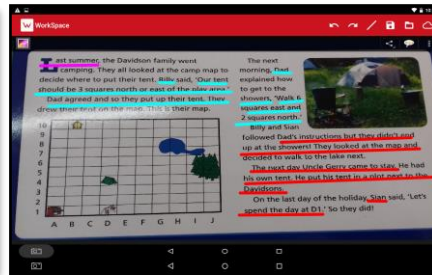




4.2 Numeracy and Literacy using tablet devices

There is a wide variety of tools which teachers can use with their students while using their tablets for Numeracy. Such tools help children understand better Mathematical concepts and participate fully in the lesson. Using the Workspace as an interactive writing space gives the children the opportunity to draw shapes, fill in handouts and construct graphs and tables and highlight the important keywords in problem solving.

	Between 5 and 15	Not between 5 and 15	
Digits add to an even number	6,8,11,13	2,4,15,20,22,24 26,28	1,2,3,4,5,6,7,8,9,10 11,12,13,14,15,16 17,18,19,20,21,22 23,24,25,26,27,28
Digits add to not an even number	7,9,10,12,14	1,3,5,16,18,21,23 25,27,29,30	29,30

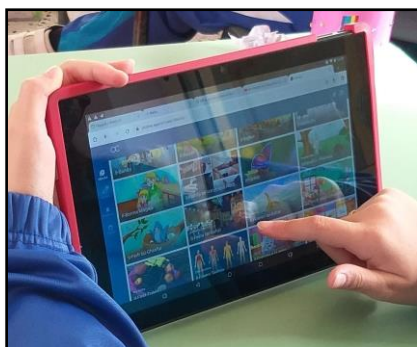


During Mathematics, children are also able to:

- Play educational online games at their own pace whilst getting immediate feedback.
- Take part in quizzes.
- Record data while doing a hands on activity.
- Take pictures of real life things related to topics learned during the lessons such as shapes, area, capacity and weight and make a Mathematics Journal.



For reading, the children's tablet is equipped with digital libraries in both English and Maltese such as Octavo (Maltese reading books), Oxford Owl and Literacy Pro (English reading books). During reading sessions children can easily search through the library to find a book appealing to them. For the lower ability students there is also the possibility to listen to the book being read to them using their personal headphones. In the libraries they can find books according to their reading level.

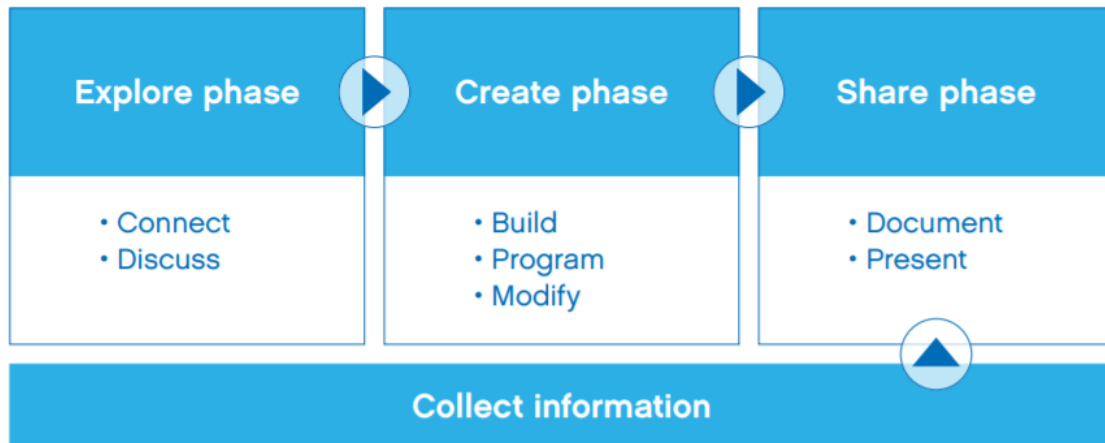




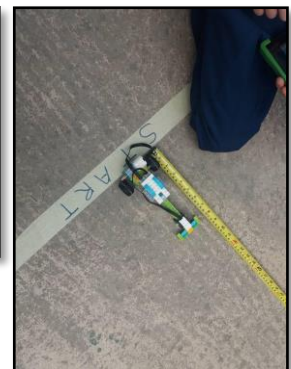
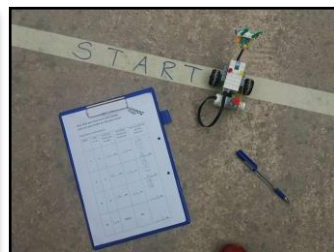
4.3 Introduction to Robotics and Coding with Lego WeDo

In this innovative type of learning children are able to assemble LEGO blocks and then programme their model by using an application on their tablet. Students work in pairs or small groups. They discuss what they are going to design and then start assemble their robot. After they programme it and try it out. They check their robot by analysing problems and they try to modify accordingly. Then they share their creation.

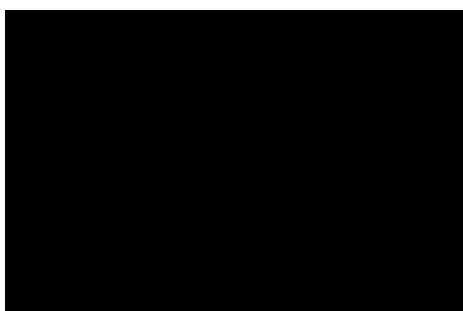
The project progression is defined into 3 phases:



These programming activities can be easily linked with the curriculum such as Mathematics. In one particular lesson, children were divided into groups and were asked to create a vehicle. After they programmed their vehicle, they competed with each other by racing their cars to the finish line. They used a stop watch. Then they measured the distance in metres and cm. If their car stopped at a certain point they had to measure the difference in distance to the finish line.



[Tutorial of LEGO WeDo 2.0](#)





4.4 *LEGO Mindstorms*

This activity takes place in Esplora – (Malta's Interactive Science Centre). There children can learn beyond the classroom environment. It increases their motivation and they are actively engaged in such hands-on activities. In the LEGO Mindstorms, children become programmers and discover how they can bring a robot to life. This is similar to LEGO We Do 2.0 but in more depth.

The students assemble robot parts to see how these work together and then explore the physics behind mechanical robot parts by building a system of motors, gears and wheels.

