Star Wars: Building a Galaxy with Code

HOUR OF CODE LESSON OVERVIEW

In this lesson, learners of all ages get an introductory experience with coding and computer science in *the target language* in a safe, supportive environment. This lesson has been designed for World Language learners in the middle grades, ages 10-15, but can be adapted for younger or older learners using the differentiation suggestions provided. Students should have a basic understanding of verb conjugations, simple geometry and drawing angles.

LESSON OBJECTIVES

Students will:

• Define “coding” and “computer science” in *the target language*

• Identify key computer science vocabulary in *the target language*

• Make connections between computer science concepts and global communities

• Build, reinforce, and expand their knowledge of other disciplines while using *the target language* to develop critical thinking and to solve problems creatively. (WL Connection standard)

Teachers will:

Design and develop digital-age learning experiences and assessments by…

* (ISTE standard 2a) designing and adapting relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity and
* (ISTE standard 2b) developing technology-enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals and managing their own learning.

Administrators will:

Create, promote and sustain a dynamic digital-age learning environment that provides a rigorous relevant and engaging education for all students by…

* (ISTE standard 2c) providing learner-centered environments equipped with technology and learning resources to meet the individual diverse needs of all students.

MATERIALS AND PREP

SUGGESTED PLANNING TIME

One Week Before Your Hour of Code

• Review the Hour of Code Educator Guide and Best Practices from Successful Educators in order to begin to plan your event

• Register your Hour of Code event if you’d like to receive swag or classroom support.

• Review and complete the online tutorial yourself: Star Wars: Building a Galaxy with Code

• Be sure to test it first before asking your students to complete it. Check your technology and decide if you need to troubleshoot anything in advance of your Hour of Code.

One Day Before Your Hour of Code

• Write the words “coding”, “programming” and “debugging” on the board or add them to your word wall if you have one.

• Write the words “Computer Science” in the middle of your board or on piece of paper at the center of a bulletin board. This will serve as your “mind map” for the Getting Ready and Assessment activities.

• You can translate aspects of the site or add subtitles by going to <https://amara.org/en/> and/or <https://code.org/files/crowdin.swf>

• Each student who completes the activity should receive a certificate (or a grade). Print one for everyone in advance to make this easier at the end of your Hour of Code.

VOCABULARY

• code (código) - (programar-v) to write code, or to write instructions for a computer.

• Debugging (depuración/depurar; débogage/debogager)- Finding and fixing problems in your algorithm or program.

• Program (programa; programme) - An algorithm that has been coded into something that can be run by a machine.

• move (mover;deplacer=to move)

• go (ir; aller=to go)

• directions (right-derecha, left-izquierda, up-arriba, down-abajo)

• function (función; fonction)

• play (tocar=to play) a sound=un sonido); reproduce (reproducir=to reproduce)

• add (añadir/agregar; ajouter=to add) points (puntos)

• remove (quitar; retirer=to remove)

• character (personaje)

GETTING STARTED (5 MINUTES)

Setting the Stage

Welcome students to class and very briefly introduce the day’s activity. Say: “Today we’re going to spend one hour learning to code. Has anyone here heard the term “code” before? What does it mean?”

Students might mention that a “code” is like a secret message, or that it’s related to computers in some way.

Explain that in computer science, “code” means a set of instructions that a computer can understand. Let students know that today, they are going to practice “coding,” “programming” and “debugging”.

Define:

• Coding means to write code, or to write instructions for a computer.

• Programming, similarly, means to write code or instructions. Today, you will program with blocks on the computer (if you’re using an online tutorial) or with pen and paper (if you’re using an unplugged activity).

• Debugging means to check code for mistakes and try to fix errors.

Ask students to name some jobs they have heard of that are related to coding. Students might mention things such as “programmer”, “computer scientist”, “software developer,” or “engineer”. Capture student responses on your “Computer Science” board, making a mind map of the information your students share.

Say: “You’re right, folks! There are no right or wrong answers here…just about any job these days involves some sort of knowledge of code. While there are many, many careers that require some knowledge of coding, learning to code is something anyone can do. And we’re going to do it today. The things we’re going to do today may not seem immediately like those, but everything you learn today could lead into making the next Angry Birds or Twitter.”

Teaching Tips

1. One way to introduce the Hour of Code if you are not very familiar with coding yourself is to show one of our inspirational videos. Choose one you think your students will find inspiring, and share it now. For learners in the middle grades, we suggest “Change the World: Hour of Code 2015.”
2. Be sure to play through your chosen tutorials yourself, before asking your students to attempt them. That way you’ll know what to expect and can make decisions about whether to let students choose their own tutorial, or if you want to assign tutorials based on student needs.
3. Review the Imperative forms of verbs (or introduce the concept to first-time learners).

ACTIVITY (30-45 MINUTES)

Go to Code.org to access the Star Wars game in English. You can translate the game into your preferred language by clicking on the drop-down arrow in the bottom left corner of the screen. Challenge your students to complete the *Star Wars: Building a Galaxy with Code* tutorial.

Depending on the age and ability of your students, you might consider:

• For Spanish 1 students, you can break your class into pairs or very small groups (three to four students each) and ask each group to work together to complete the tutorial using pair programming. You may also be interested in having students complete the English version of the activity and introduce the concept of command forms.

• Spanish 2 students can work independently on tutorials. Sometimes it helps to allow students to choose their own tutorial. If students aren’t interested in Star Wars, they can get a similar experience with the Write Your First Computer Program tutorial. These students can use this as an introductory activity to discover the use of command forms. As you create more detailed lessons, you can always refer back to the command forms from this coding lesson. Students can also expand upon the word map by adding newly discovered vocabulary if they are not ready to explore the formation of commands,

• For advanced students, *Star Wars: Building a Galaxy with Code* works extremely well either as an independent challenge or a pair programming activity. This activity can be used as a review of the command forms.

If a group or individual finishes early, they can attempt another tutorial by visiting code.org/learn.

CLOSING (5 MINUTES)

Debrief

Give each student a few sticky notes or notecards. Facilitate a quick “Whip Around” activity:

• Pose a prompt that has multiple answers such as “Share back something you really liked about the Hour of Code activity you completed” or “Share some skills you learned today.”

• Have students write down as many responses as possible, one idea per sticky note or note card. “Whip” around the room, calling on one student at a time. Have students share one of their responses. When called on, students should not repeat a response; they must add something new.

• After completing the whip around, have students discuss which ideas and themes showed up most in their responses.

Celebrate

Explain that you are spending one hour coding today, because this week is CS Education Week, and millions of other students across the globe have also been learning one Hour of Code this week. Congratulate students on being part of this world wide movement.

Give each student a certificate with his or her name on it or a grade for participating in the activity.

Next Steps

Let students know that if they enjoyed today’s activity, they have many options for continuing to code. Encourage students to visit code.org/learn for a list of options, or, if you’re planning any of the extension activities that follow, tell students what’s coming next in your classroom.

ASSESSMENT (2 MINUTES)

Ask students to add their “Whip Around” sticky notes or note cards to your “Computer Science” mind map on their way out the door. Try to populate the board with lots of great ideas about what CS is and why it matters.

EXTENDED LEARNING

Beyond an Hour of Code

After your Hour of Code ends, there are many ways to continue teaching computer science in your K-5 classroom. Here are some ideas:

• Teach the Code Studio Computer Science Fundamentals courses. These four courses are designed for young learners. Students work their way through a series of puzzles that teach them to code, and educators have access to engaging lesson plans that help make the learning coming alive. Code.org offers free professional development for these courses, online or in-person.

• Research some of the careers in coding you identified today. Find resources on planning career research projects on Sharemylesson.com.

• Invite a computer science expert to talk to your class about his or her work. Don’t know any local computer scientists? Try signing up for a virtual classroom visit through Code.org’s and Skype’s Guest

Speakers in Computer Science program.

Hora de código-en español

A. Vocabulario útil

Piensa en el vocabulario que necesitas para hacer la actividad. Puedes agregar más espacios si son necesarios.

código

Ciencia de la computación

B. Los mandatos

Después de empezar la actividad de Code.org, escribe los mandatos que has aprendido e elige su forma correcta.

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| **mandato** | **infinitive** | **tú** | **usted** | **ustedes** |
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C. Tu opinión-Escribe un párrafo de 8-10 oraciones que expresa tu opinión de hacer esta actividad de código.

Heure de code-au français

A. Vocabulaire

Pense vocabulaire que tu deves faire l'activité. Tu pouves ajouter plus d'espace si nécessaire.

Informatique

code

B. Le commande

Après le démarrage de l'activité Code.org tapez les commandes que tu as appris et choisisses la forme correcte.

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| **commande** | **infinitif** | **familier** | **formel** |
| *ej.* obtiens | obtenir | **✓** |  |
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C. Ta opinion-Écrit un avis paragraphe 8-10 phrases exprimant ta opinion à ce code d'activité.