# INVENT THE FUTURE CHALLENGE

**Grades 6-8**

# UNIT PACING GUIDE

KID MUSEUM

# Pacing Guide

| Unit 1: 10 Lessons | |
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| **Lesson 1: Invent the Future Challenge Introduction**<br>➔ Warm Up- Rapid Design Challenge<br>➔ Discussion - Brainstorming potential problems | *1 class period* |
| **Explore – Identify a problem and find out more** | |
| **Lesson 2: Approach Matters - How to Define Your Problem**<br>➔ Activity - Approach Matters Design Challenge | *1 class period* |
| **Lesson 3: Defining Your Invent the Future Problem - Research**<br>➔ Activity - Choosing Teams, and researching problems | *1 class period* |
| **Lesson 4: Defining Your Problem**<br>➔ Warm Up- Rapid Design Challenge OR additional research time<br>➔ Activity - Creating Problem Statements | *1 class period* |
| **Imagine – Brainstorm many possible solutions** | |
| **Lesson 5: Brainstorming a Solution**<br>➔ Warm Up- Rapid Design Challenge<br>➔ Activity - 2+ 1 Solution Brainstorm | *1 class period* |
| **Design – Choose one idea and plan it out** | |
| **Lesson 6: Developing a Solution**<br>➔ Activity - Sketch It Out<br>➔ Activity - Defining criteria and constraints | *1 class period* |
| **Create – Make a prototype to communicate your idea** | |
| **Lesson 7: Building a Prototype, Part 1**<br>➔ Activity - Open Build time | *1 class period* |
| **Lesson 8: Building a Prototype, Part 2**<br>➔ Activity - Open Build time continued<br>➔ Activity - Feedback and Iteration | *1 class period* |
| **Share – Tell others about what you did and how you did it** | |
| **Lesson 9: Communicating Ideas - Showcase Preparation, Part 1**<br>➔ Activity - Shaping Your Story | *1 class period* |
| **Lesson 10: Communicating Ideas - Showcase Preparation, Part 2**<br>➔ Activity - Feedback and Practice<br>➔ Activity - Showcase Preparation | *1 class period* |

| Optional Skill Building Lessons | | |
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| *These lessons can be moved wherever in the curriculum they fit your needs. They are independent of the design cycle and aim to help your students gain skills for their projects. All are optional.* | | |
| **Skill Building Lesson 1: Cardboard Chair Challenge** | *Optional lesson* | *1 class period* |
| **Skill Building Lesson 2: Introduction to micro:bit** | *Optional lesson* | *1 class period* |
| **Skill Building Lesson 3: Introduction to TinkerCAD** | *Optional lesson* | *1 class period* |

| KID Museum Field Trips (In Person or Virtual) | |
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| *These 90 minute sessions are designed to support students when building their projects. They will be introduced to skills and will practice rapid prototyping in various activities.* | |
| **Trip 1: Engineering Design Explorer** | *These trips can occur at any time in the curriculum, including before starting the lessons until Lesson 7* |
| **Trip 2: Tech & Robotics Explorer** | |
| **Trip 3: Open Build** | *This trip is designed to support the prototyping process. It should occur after lesson 6 and before lesson 9. Teams should bring all of their plans and sketches, and any prototypes that they have started to the visit, and will leave with whatever prototype they have created at KID Museum.*<br>***pacing note: if time is an issue, this trip can replace lesson 7.* |