| Nine Weeks | Units/Chapters | Standards |
|---|---|---|
| 1st Nine Weeks<br><br>Dates to remember:<br>At the start of each month, students will be introduced to the Monthly Build Challenge. Each month will be a different theme. The goal of the build challenges is to encourage creativity, design, and collaboration with peers. Students have until the end of the month to complete it. | Unit 1: Coding Fundamentals 1<br>Unit 2: Coding Fundamentals 2 | 6-8.DI.1, 6-8.DI.3, 6-8.DI.4<br>6-8.PA.1, 6-8.PA.2, 6-8.PA.3<br>6-8.IC.1<br>6-8.CD.2 |
| 2nd Nine Weeks<br><br>Dates to remember:<br>Build Challenges continue during the 2nd nine weeks. | Unit 3: Coding Fundamentals 3<br>Unit 4: Python Islands | 6-8.DI.1, 6-8.DI.3, 6-8.DI.4<br>6-8.PA.1, 6-8.PA.2, 6-8.PA.3<br>6-8.IC.1<br>6-8.CD.2 |

COPY AND PASTE THE TEMPLATE BELOW FOR THE NUMBER OF UNITS/TOPICS

**Unit/Topic:** Coding Fundamentals 1 – Animal Research Center

**Essential Question(s):** How can computers help us model plausible solutions to identified problems?

| Lesson & Duration | Standards & Objectives | Key Terms | Activities (formative) | Assessment (summative) | Resources |
|---|---|---|---|---|---|
| Basic Moves (1 day) | 6-8.DI.1<br>6-8.DI.4<br>6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.PA.4 | MakeCode<br>Decomposition<br>Sequencing<br>Pseudocode | Activity 1: Minecraft eye fitness test<br>Activity 2: Minecraft navigation<br>Activity 3: Meet the Agent!<br>Activity 4: Agent move!<br>Activity 5: Agent move up!<br>Bonus activity: Advanced simulation | Lesson Conclusion Quiz | Minecraft Education Edition<br><br>Lesson Educator Guide |
| Sea Turtles (2 days) | 6-8.DI.1<br>6-8.DI.4<br>6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.PA.4 | Pattern Recognition<br>Algorithm<br>Loop | Activity 1: Turtle tracks<br>Activity 2: Agent turn<br>Activity 3: Blocked path<br>Activity 4: Garbage clean-up<br>Bonus activity: Beach clean-up | Lesson Conclusion Quiz | Minecraft Education Edition<br><br>Lesson Educator Guide |

| **Unit/Topic:** Coding Fundamentals 1 – Animal Research Center | | | | | |
|---|---|---|---|---|---|
| **Essential Question(s):** How can computers help us model plausible solutions to identified problems? | | | | | |
| **Lesson & Duration** | **Standards & Objectives** | **Key Terms** | **Activities (formative)** | **Assessment (summative)** | **Resources** |
| Polar Bear Rescue (2 days) | 6-8.DI.1<br>6-8.DI.4<br>6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.PA.4 | Loop<br>Conditional | Activity 1: Locate the cub<br>Activity 2: The great chasm<br>Activity 3: Higher ground<br>Bonus activity: Separated Family | Lesson Conclusion Quiz | Minecraft Education Edition<br><br>Lesson Educator Guide |
| Panda's Habitat (2 days) | 6-8.DI.1<br>6-8.DI.4<br>6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.PA.4 | | Activity 1: Secure the area<br>Activity 2: Bamboo border<br>Activity 3: Bamboo hideaway<br>Activity 4: Make it pretty | Lesson Conclusion Quiz | Minecraft Education Edition<br><br>Lesson Educator Guide |
| Gray Wolves (2 days) | 6-8.DI.1<br>6-8.DI.4<br>6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.PA.4 | Loop<br>Nested Loop<br>Conditional | Activity 1: Secure the Chicken Coup<br>Activity 2: Moving the Sheep<br>Activity 3: Hazing<br>Activity 4: Clearing the area | Lesson Conclusion Quiz | Minecraft Education Edition<br><br>Lesson Educator Guide |
| Revisiting Biomes (2 days) | 6-8.DI.1<br>6-8.DI.4<br>6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.PA.4 | | 5 min – Review<br>5-10 min – Planning, forming groups<br>20-25 min – Collaborative build<br>10-15 min – Presentation | Students will present their group projects | Minecraft Education Edition<br><br>Lesson Educator Guide |

| **Unit/Topic:** Coding Fundamentals 2 – Space Center | | | | | |
|---|---|---|---|---|---|
| **Essential Question(s):** How can computers help us model plausible solutions to identified problems? | | | | | |
| **Lesson & Duration** | **Standards & Objectives** | **Key Terms** | **Activities (formative)** | **Assessment (summative)** | **Resources** |
| Space Center (2 days) | 6-8.DI.1<br>6-8.DI.3<br>6-8.PA.1<br>6-8.PA.2 | Conditional | Activity 1: Detecting the First Material (Repeat Loop + If Conditional)<br>Activity 2: Detecting Surroundings (While Loop + If Else Conditional) | Lesson Conclusion Quiz | Minecraft Education Edition |

| **Unit/Topic:** Coding Fundamentals 2 – Space Center | | | | | |
|---|---|---|---|---|---|
| **Essential Question(s):** How can computers help us model plausible solutions to identified problems? | | | | | |
| **Lesson & Duration** | **Standards & Objectives** | **Key Terms** | **Activities (formative)** | **Assessment (summative)** | **Resources** |
| | 6-8.PA.3<br>6-8.IC.1<br>6-8.CD.2 | | Activity 3: Navigating a Spiral (While Loop + If Else Conditional)<br>Activity 4: Navigating 3D Space (Repeat Loop + While Loop + If Else)<br>Activity 5: Just Like the Simulations (Bonus) | | Lesson Educator Guide |
| Mercury and Venus (2 days) | 6-8.DI.1<br>6-8.DI.3<br>6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.IC.1<br>6-8.CD.2 | Conditional<br>Loop<br>If/else | Activity 1: Mercury, Finding a Crater<br>Activity 2: Mercury, Locating a Sample<br>Activity 3: Venus, Finding the Surface<br>Activity 4: Venus, Helping the Agent<br>Activity 5: Bonus! Virtual Gathering | Lesson Conclusion Quiz | Minecraft Education Edition<br><br>Lesson Educator Guide |
| Moon and Mars (2 days) | 6-8.DI.1<br>6-8.DI.3<br>6-8.DI.4<br>6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.IC.1<br>6-8.CD.2 | Debugging<br>Persistence | Activity 1: Earth's Moon, Surface Stone<br>Activity 2: Earth's Moon, Deep Stone<br>Activity 3: Mars, Tracking Down the Rover<br>Activity 4: Mars, Repair the Rover<br>Activity 5: Simulations! Bonus | Lesson Conclusion Quiz | Minecraft Education Edition<br><br>Lesson Educator Guide |
| Ganymede and Saturn (2 days) | 6-8.DI.1<br>6-8.DI.3<br>6-8.DI.4<br>6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.IC.1 | Comparison Operator<br>Boolean<br>Disjunction | Activity 1: Ganymede, In the Groove<br>Activity 2: Ganymede, Ready to Rock<br>Activity 3: Saturn's Rings, Mining Precious Metals<br>Activity 4: Bonus! Simulations! | Lesson Conclusion Quiz | Minecraft Education Edition<br><br>Lesson Educator Guide |
| Uranus and Neptune (2 days) | 6-8.DI.1<br>6-8.DI.3<br>6-8.DI.4<br>6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.IC.1 | Debugging<br>Persistence<br>Attention to Detail | Activity 1: Uranus's rings<br>Activity 2: Neptune's Moon Triton | Lesson Conclusion Quiz | Minecraft Education Edition<br><br>Lesson Educator Guide |

| **Unit/Topic:** Coding Fundamentals 2 – Space Center | | | | | |
|---|---|---|---|---|---|
| **Essential Question(s):** How can computers help us model plausible solutions to identified problems? | | | | | |
| **Lesson & Duration** | **Standards & Objectives** | **Key Terms** | **Activities (formative)** | **Assessment (summative)** | **Resources** |
| | 6-8.CD.2 | | | | |
| Revisiting Planets (2 days) | 6-8.DI.1<br>6-8.DI.3<br>6-8.DI.4<br>6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.IC.1<br>6-8.NC.1<br>6-8.NC.2 | | 5 min – Review<br>5-10 min – Planning, forming groups<br>20-25 min – Collaborative build<br>10-15 min – Presentation | Students will present their group projects | Minecraft Education Edition<br><br>Lesson Educator Guide |

| **Unit/Topic:** Coding Fundamentals 3 – Running Out of Time | | | | | |
|---|---|---|---|---|---|
| **Essential Question(s):** How can computers help us experiment and develop innovative concepts and ideas? | | | | | |
| **Lesson & Duration** | **Standards & Objectives** | **Key Terms** | **Activities (formative)** | **Assessment (summative)** | **Resources** |
| The Experiment (2 days) | 6-8.DI.1<br>6-8.DI.3<br>6-8.DI.4<br>6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.IC.1<br>6-8.CD.2 | Event<br>Event Handler | Activity 1: Lava Swim<br>Activity 2: The Climb<br>Activity 3: Building<br>Activity 4: Change the World!<br>Activity 5: Make it Rain! | Lesson Conclusion Quiz | Minecraft Education Edition<br><br>Lesson Educator Guide |
| Dinosaur Run (2 days) | 6-8.DI.1<br>6-8.DI.3<br>6-8.DI.4<br>6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.IC.1<br>6-8.CD.2 | Event<br>Event Handler | Activity 1: Dinosaur Sneak<br>Activity 2 - 4: Navigating the Temple<br>Activity 5: Powering the Gate | Lesson Conclusion Quiz | Minecraft Education Edition<br><br>Lesson Educator Guide |
| Rome, Sweet Rome (2 days) | 6-8.DI.1<br>6-8.DI.3 | Event<br>Event Handler | Activity 1: Columns<br>Activity 2: A Little Help | Lesson Conclusion Quiz | Minecraft Education Edition |

| **Unit/Topic:** Coding Fundamentals 3 – Running Out of Time | | | | | |
|---|---|---|---|---|---|
| **Essential Question(s):** How can computers help us experiment and develop innovative concepts and ideas? | | | | | |
| **Lesson & Duration** | **Standards & Objectives** | **Key Terms** | **Activities (formative)** | **Assessment (summative)** | **Resources** |
| | 6-8.DI.4<br>6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.IC.1<br>6-8.CD.2 | | Activity 3: Pretty Things | | Lesson Educator Guide |
| Wild West (2 days) | 6-8.DI.1<br>6-8.DI.3<br>6-8.DI.4<br>6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.IC.1<br>6-8.CD.2 | Event<br>Event Handler | Activity 1: Mine the Resources<br>Activity 2: Starter Houses<br>Activity 3: Town Hall | Lesson Conclusion Quiz | Minecraft Education Edition<br><br>Lesson Educator Guide |
| We Need Beets! (2 days) | 6-8.DI.1<br>6-8.DI.3<br>6-8.DI.4<br>6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.IC.1<br>6-8.CD.2 | Function | Activity 1: Learn to Plant<br>Activity 2: Planting Continues<br>Activity 3: Multiple Rows<br>Activity 4: Planting Even More Rows | Lesson Conclusion Quiz | Minecraft Education Edition<br><br>Lesson Educator Guide |
| Coding Challenge (2 days) | 6-8.DI.1<br>6-8.DI.3<br>6-8.DI.4<br>6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.IC.1<br>6-8.CD.2 | | 10-15 min – Review<br>10-15 min – Planning, forming groups<br>40-45 min – Collaborative build<br>5-10 min – Swapping the builds<br>10-15 min – Coding puzzles solution<br>5-10 min – Wrap-up | Students will present their group projects | Minecraft Education Edition<br><br>Lesson Educator Guide |

| **Unit/Topic:** Python Islands | | | | | |
|---|---|---|---|---|---|
| **Essential Question(s):** How can I code an artificial intelligence to complete various tasks using Phython? | | | | | |
| **Lesson & Duration** | **Standards & Objectives** | **Key Terms** | **Activities (formative)** | **Assessment (summative)** | **Resources** |
| Island 1 (2 days) | 6-8.DI.1<br>6-8.DI.3<br>6-8.DI.4<br>6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.IC.1<br>6-8.CD.2 | Notebooks<br>Decomposition<br>Sequencing<br>Outputs<br>Variables | Activity 1.1: Say()<br>Activity 1.2: Variables<br>Activity 2: Agent Move<br>Activity 3: Farmland<br>Activity 4: Picking Up Apples<br>Activity 5: Mine | Lesson Conclusion Quiz | Minecraft Education Edition<br><br>Lesson Educator Guide |
| Island 2 (2 days) | 6-8.DI.1<br>6-8.DI.3<br>6-8.DI.4<br>6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.IC.1<br>6-8.CD.2 | Conditional Statements<br><br>If Statement<br><br>Nested if/else satements | Activity 1: Weather<br>Activity 2: Mine 1<br>Activity 3: Forest<br>Activity 4: Farm<br>Activity 5: Mine 2<br>Activity 6: Blacksmith | Lesson Conclusion Quiz | Minecraft Education Edition<br><br>Lesson Educator Guide |
| Island 3 (2 days) | 6-8.DI.1<br>6-8.DI.3<br>6-8.DI.4<br>6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.IC.1<br>6-8.CD.2 | For Loop<br><br>Nested loops | Activity 1: Airship Covering<br>Activity 2: Airship Gangplank<br>Activity 3: Library<br>Activity 4: Forest<br>Activity 5: Mine<br>Activity 6: Farm | Lesson Conclusion Quiz | Minecraft Education Edition<br><br>Lesson Educator Guide |
| Island 4 (2 days) | 6-8.DI.1<br>6-8.DI.3<br>6-8.DI.4<br>6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.IC.1<br>6-8.CD.2 | For Loop<br>While Loop | Activity 1: Distant Island Bridge<br>Activity 2: Mine Factory<br>Activity 3: Botanical Gardens<br>Activity 4: Airship Factory | Lesson Conclusion Quiz | Minecraft Education Edition<br><br>Lesson Educator Guide |
| Island 5 (2 days) | 6-8.DI.1<br>6-8.DI.3<br>6-8.DI.4 | Function<br>Parameter<br>Return Statement | Activity 1: Supporting Towers<br>Activity 2: Light Translator<br>Activity 3: Bouncing | Lesson Conclusion Quiz | Minecraft Education Edition |

| **Unit/Topic:** Python Islands | | | | | |
|---|---|---|---|---|---|
| **Essential Question(s):** How can I code an artificial intelligence to complete various tasks using Phython? | | | | | |
| **Lesson & Duration** | **Standards & Objectives** | **Key Terms** | **Activities (formative)** | **Assessment (summative)** | **Resources** |
| | 6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.IC.1<br>6-8.CD.2 | Event | Activity 4: Power Linkup | | Lesson Educator Guide |
| Island 6 (2 days) | 6-8.DI.1<br>6-8.DI.3<br>6-8.DI.4<br>6-8.PA.1<br>6-8.PA.2<br>6-8.PA.3<br>6-8.IC.1<br>6-8.CD.2 | List<br>Appending | Activity 1: Space Centre<br>Activity 2: Archaeological Dig<br>Activity 3: Rocket Defects<br>Activity 4: Airport Runway | Lesson Conclusion Quiz | Minecraft Education Edition<br><br>Lesson Educator Guide |