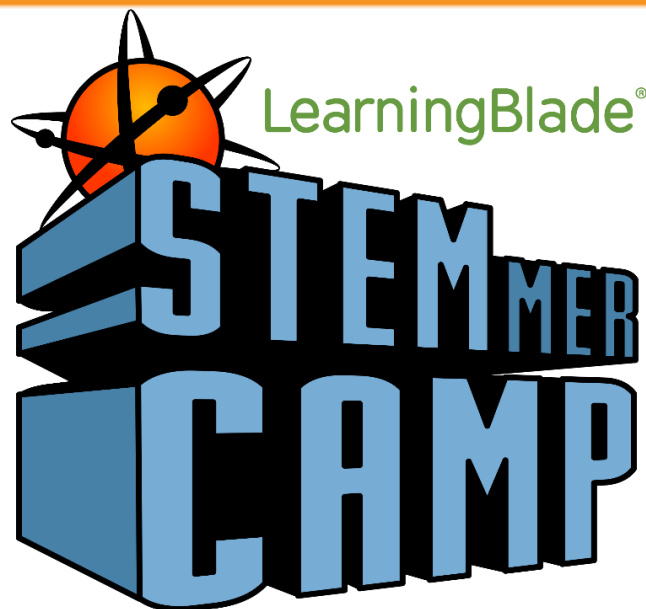




Learning Blade® STEMmer Camp Course Outline

STUDENT SHEET



STEMmer camp is designed to incorporate Learning Blade's online and offline activities into a one or two week long summer STEM camp experience where students gain STEM and computer science career exposure. Each session is approximately 4 hours long.

Each session will follow the same, general format, incorporating hands-on exercises, online Learning Blade activities, experiment observations/ calculations, practice with research and presentation skills and a take-home activity.

5 Core Elements of Each Session

1. Hands On STEM Engineering Challenge
2. Online Learning Blade Missions
3. Hands On STEM Engineering Challenge
4. Research (Student Centered – Interest Driven)
5. Take-home Activity





Learning Blade® STEMmer Camp

Course Outline



TEACHER SHEET

Each session will follow the same, general format, incorporating hands-on exercises, online Learning Blade activities, experiment observations/ calculations, and practice with research and presentations.

The STEMmer Camp curriculum is divided into ten sessions addressing the following STEM areas:

- S.01 Fresh Food** - Students learn about food production, focusing on plant growth, farming methods, and the importance of the food supply.
- S.02 Manufacturing a Concept Car** - Student explore design and manufacturing processes of new automobiles, and engage in hand-on construction and testing of simple cars.
- S.03 Haiti Orphanage** - Students focus on the impact of an earthquake, and how it spawns scientific advances in construction and structural engineering.
- S.04 Lightweight Aircraft** - Students explore the principles of flight, and aircraft development, focusing on buoyancy and material science.
- S.05 Rescue Robot** - Students learn about robotics and mechanical automation, exploring concepts of programming structure, sensory input, and mechanical interfaces.
- S.06 Heart Surgery** - Students learn about advances in medical technology, and the benefits to society of improved healthcare treatments and procedures.
- S.07 Dolphin Rescue** - Students explore the technologies related to rehabilitating injured animals, and scientific principles related to marine biology.
- S.08 Transportation Congestion** - Students focus on the importance of transportation to society and engage in experiments related to developing efficient, safe, and effective transit systems.
- S.09 Energy Production** - Students experience the importance of reliable, responsible, and environmentally sustainable power production to a community.
- S.10 Bridge Building** - Students learn about the importance of construction and civil engineering, with hands-on activities focusing on architecture and bridge design.





2 WEEK LESSON PLAN (4 Hours a Day)

Each day is designed around a 4 hour block of time that will follow the same, general format, incorporating hands-on exercises, online Learning Blade activities, experiment observations/ calculations, and practice with research and presentations.

Each Day the STEMmer Camp curriculum addresses a different focus area in STEM:

- Day 1 Fresh Food** - Students learn about food production, focusing on plant growth, farming methods, and the importance of the food supply.
- Day 2 Manufacturing a Concept Car** - Student explore design and manufacturing processes of new automobiles, and engage in hand-on construction and testing of simple cars.
- Day 3 Haiti Orphanage** - Students focus on the impact of an earthquake, and how it spawns scientific advances in construction and structural engineering.
- Day 4 Lightweight Aircraft** - Students explore the principles of flight, and aircraft development, focusing on buoyancy and material science.
- Day 5 Rescue Robot** - Students learn about robotics and mechanical automation, exploring concepts of programming structure, sensory input, and mechanical interfaces.
- Day 6 Heart Surgery** - Students learn about advances in medical technology, and the benefits to society of improved healthcare treatments and procedures.
- Day 7 Dolphin Rescue** - Students explore the technologies related to rehabilitating injured animals, and scientific principles related to marine biology.
- Day 8 Transportation Congestion** - Students focus on the importance of transportation to society and engage in experiments related to developing efficient, safe, and effective transit systems.
- Day 9 Energy Production** - Students experience the importance of reliable, responsible, and environmentally sustainable power production to a community.
- Day 10 Bridge Building** - Students learn about the importance of construction and civil engineering, with hands-on activities focusing on architecture and bridge design.





1 WEEK LESSON PLAN (8 Hours a Day)

Each day is designed around a 4 hour block of time that will follow the same, general format, incorporating hands-on exercises, online Learning Blade activities, experiment observations/ calculations, and practice with research and presentations.

Each Day the STEMmer Camp curriculum addresses 2 different focus area in STEM:

- Day1 (morning) Fresh Food** - Students learn about food production, focusing on plant growth, farming methods, and the importance of the food supply.
- Day 1 (afternoon) Manufacturing a Concept Car** - Student explore design and manufacturing processes of new automobiles, and engage in hand-on construction and testing of simple cars.
- Day 2 (morning) Haiti Orphanage** - Students focus on the impact of an earthquake, and how it spawns scientific advances in construction and structural engineering.
- Day 2 (afternoon) Lightweight Aircraft** - Students explore the principles of flight, and aircraft development, focusing on buoyancy and material science.
- Day 3 (morning) Rescue Robot** - Students learn about robotics and mechanical automation, exploring concepts of programming structure, sensory input, and mechanical interfaces.
- Day 3 (afternoon) Heart Surgery** - Students learn about advances in medical technology, and the benefits to society of improved healthcare treatments and procedures.
- Day 4 (morning) Dolphin Rescue** - Students explore the technologies related to rehabilitating injured animals, and scientific principles related to marine biology.
- Day 4 (afternoon) Transportation Congestion** - Students focus on the importance of transportation to society and engage in experiments related to developing efficient, safe, and effective transit systems.
- Day 5 (morning) Energy Production** - Students experience the importance of reliable, responsible, and environmentally sustainable power production to a community.
- Day 5 (afternoon) Bridge Building** - Students learn about the importance of construction and civil engineering, with hands-on activities focusing on architecture and bridge design.

