Crawl-Walk-Run-Fly!

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### Crawl
- Present a problem or challenge
  - “The greatest risk to space missions comes from non-trackable debris” — Nicholas Johnson, Chief Scientist for Orbital Debris 2014
- Birth of an idea
  - Research,
  - Find heritage to support
- Develop a mission
  - Define mission statement
  - Establish Goals and Objectives
- Create early concepts, models, drawings

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### Walk
- High Altitude Balloon Testing
  - Excellent Test Environment
  - Cost Effective
  - Increases Test Readiness Levels
- Model and Test
  - Integrate Systems
  - Continue Ground Testing
- Validate Mission
  - Present findings to peers
  - Publish in accredited resources

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### Run
- Sounding Rocket Flights
  - Full Exposure to space
  - Proves payload can survive launch
- Full Mission Testing
  - Subsystem testing
  - FlatSat Testing
  - Day in the Life Testing
- Industry Testing
  - NASA accredited testing
  - Testing to expected specific environment
  - Vibration/Thermal Testing

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### Fly
- Full Orbital Mission
  - Achieved Test Readiness Levels
  - Continue Developing Heritage
- Student Benefits
  - Real mission experience
  - Creates well rounded individuals
  - Provides problem solving experience
  - Provides a real world STEM application

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**Why**

The Crawl, Walk, Run development cycle was introduced to CapTechU engineering teams by Dr. Terry Teays, former Assistant Director of the Maryland Space Grant Consortium. This development cycle creates a standardized path to mission success, funding, environmental and systems testing. Methodologies such as this provides and standardized procedure that works well with state space grant consortia as well as similar sources of support. This model is great for taking student projects from an idea or concept to a full space flight mission.

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