Robotics Merit Badge - Prereq. Worksheet

Scout Name (First Last): _____ **Troop:** _____ **Date:** _____

Instructions: To maximize our hands-on building and programming time during the workshop, you must complete this worksheet prior to attending. Requirements 1 (Safety), 4 (Build/Program), and 5 (Demonstrate) will be completed in class. All answers must be written in full, complete sentences. Single words or fragmented sentences will not be accepted.

Requirement 2: Robotics Industry

Task (a): Discuss the kinds of things robots can do and how they are best used today.

- What robots do: _____

  _____

- Best uses today: _____

  _____

Task (b): Describe the similarities and differences between the following:

- **Remote-Control Vehicles vs. Autonomous Robots:** _____

  _____

- **Telerobots vs. Autonomous Robots:** _____

  _____

Task (c): List three different methods robots can use to move themselves ***other than wheels or tracks***. Describe when it would be appropriate to use each method.

1. **Method:** _____ **Best used when:** _____

   _____

2. **Method:** _____ **Best used when:** _____

   _____

3. **Method:** _____ **Best used when:** _____

   _____

Requirement 3: General Knowledge

Task: Choose THREE of the five major fields of robotics (human-robot interface, mobility, manipulation, programming, sensors). Discuss their importance to robotics development in general, or how they relate to a single robot system.

Be prepared to show pictures or at least one video to aid your discussion.

- **Field 1:** _____ **Importance:** _____

  _____

- **Field 2:** _____ **Importance:** _____

  _____

- **Field 3:** _____ **Importance:** _____

  _____

Requirement 6: Competitions

Task: (Option 6b) Research three youth robotics competitions (e.g., FIRST, VEX, BEST). For each, provide the following details in full sentences.

Competition 1: _____

- **Type of Competition:** _____
- **Time Commitment:** _____
- **Age of Participants:** _____
- **Number of Teams Involved:** _____

Competition 2: _____

- **Type of Competition:** _____
- **Time Commitment:** _____
- **Age of Participants:** _____
- **Number of Teams Involved:** _____

Competition 3: _____

- **Type of Competition:** _____
- **Time Commitment:** _____
- **Age of Participants:** _____
- **Number of Teams Involved:** _____

Requirement 7: Career Exploration

Task: (Option 7a)Identify three career opportunities that would use skills and knowledge in robotics. Pick one and research the training, education, certification requirements, experience, and expenses associated with entering the field. Research the prospects for employment, starting salary, advancement opportunities and career goals associated with this career. Discuss what you learned with your counselor and whether you might be interested in this career.

3 Careers: _____, _____, _____.

Chosen Career: _____

- **Training & Education Needed: _____**

  _____

- **Estimated Costs of Education/Certifications: _____**

  _____

- **Job Prospects & Expected Salary: _____**

  _____

- **Day-to-Day Job Duties: _____**

  _____

- **Career Advancement Opportunities: _____**

  _____

- **Why This Profession Is Interesting to Me: _____**

  _____

Verification Sign-Off

By signing below, the Scout confirms that they completed this research independently and in full sentences. The Parent/Guardian confirms that they reviewed this work.

Scout Signature: _____ Date: _____

Parent/Guardian Signature: _____ Date: _____