

1. Both are arthropods; they share arthropod characteristics such as an exoskeleton, segmented body parts, and bilateral symmetry.
2. The grasshopper is an insect. The spider is not an insect because it lacks the insect characteristics of six legs and three well-defined body parts.

3. Answers will vary. Students might point to the phylum members' diversity and adaptability. Characteristics pertinent to the success of individual arthropod species could include wings, life cycles adapted to specific environments, and a hardy exoskeleton, among others.

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1. Are both of these organisms arthropods? How can you tell?
2. Are both of these organisms insects? How can you tell?
3. Arthropods make up 80 percent of identified animal species. What characteristics do you think account for the success of this group?