

3ACE Exercise 9**Investigation 3****Frogs, Fleas, and Painted Cubes**

9. In a school math league, each team has **six student members** and **two coaches**.

- a. At the start of a match, the coaches and student members of one team exchange handshakes with the coaches and student members of the other team.

HINT Drawing a picture may help you answer all the questions.

How many handshakes does one person make with members of the other team (student members plus coaches)?

If 8 people (6 student members and 2 coaches) all shake the same number of hands as 1 person, how many handshakes do all 8 members of 1 team make?

- b. At the end of the match, the members and coaches of the winning team exchange handshakes. How many handshakes occur?

How many people can a player exchange handshakes with on his/her own team?

HINT Drawing a picture may help you answer these questions.

If 8 people all shake hands with the same number of people, how many handshakes will there be in total?

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- c. The members of one team exchange handshakes with their coaches. How many handshakes occur?

How many handshakes can 1 coach make with 2 coaches and 6 student members of the other team?

HINT Drawing a picture may help you answer the questions.

How many handshakes would 2 coaches then make?