Name Date

Enrichment and Extension

4.1

Compound Inequalities

Little League is a commercially sponsored baseball league for boys and girls.

A *compound inequality* is a special type of inequality that places both an upper and lower boundary on a variable. Write a compound inequality that describes the Little League rule.

Example: The maximum number of innings in a Little League game is 6. Each player must play at least 2 innings. Write a compound inequality   
that represents the number of innings a player plays.

Let *n* represent the number of innings a player plays. Because 2 is the minimum number of innings and 6 is the maximum number of innings,   
the compound inequality that represents the number of innings a player plays is 

1. To be eligible to play Little League, a player must be at least 9 years old and at most 12 years old. Let *a* represent the player’s age.

a. Write an inequality that represents the minimum age a player must be   
to participate in Little League.

b. Write an inequality that represents the maximum age a player can be   
to participate in Little League.

c. Use the inequalities from parts (a) and (b) to write a compound inequality that represents the age restrictions of Little League players.

2. For health and safety reasons, the number of pitches *p* a player can make per game is limited based on his or her age. A 12-year-old may pitch a maximum of 85 pitches in a game day.

a. Write an inequality that represents the minimum number of pitches a player could make during a game.

b.Write an inequality that represents the maximum number of pitches a player could make during a game.

c. Use the inequalities from parts (a) and (b) to write a compound inequality that represents the number of pitches that a player can throw per game.

3. A Little League game lasts for at least 3.5 innings and at most 6 innings. Write a compound inequality that represents the number of innings *n* that   
a Little League game lasts.