

ACTIVITY IA4.10: Expression Card Families

Intended learning: To learn relationships between addition tasks in the range 1 to 20.

Instructional mode: Longer, productive practice for individuals or groups.

- ⑤ **Materials:** A set of addition expression cards for each student or group. A set could be all 25 additions with addends in the range 1–5, or all 55 additions with totals in the range 1–10, or all 121 additions with addends in the range 0–10.

Description: As an introduction, give one expression card to each student in the class, so that much of a set is distributed through the room. *Mark, what is your expression? ‘Three plus five’. What is your answer? ‘Eight’. Does anyone else have an answer of eight? Could you all come and stand with Mark – you are the family of eight. Does anyone have an answer of nine? Could the nine family all gather here in the corner? ... Could each of the other families gather together please?* Once gathered in families, each family can read out their expression. Return the expression cards. Next, work in groups or individually. Each group is given a set of expression cards, and is asked to organize them into families on the desk.

Responses, variations and extensions:

- In assigning each card to a family, students will be practising basic addition tasks.
- Once the cards are organized into families, the class can look for relationships: turn-arounds like $3 + 5$ and $5 + 3$ are in the same family, $6 + 2$ is in the same family as $7 + 1$, ... and in the family after $5 + 2$.
- Each family can be further organized: the family of eight can be ordered as $8 + 0$, $7 + 1$, $6 + 2$...
- ⑤ • Give each student an additions table grid to colour-code each family. Alternatively, each student writes out the neatly organized families.
- *How many expressions make 1? ... make 2? ... make 3? ...*
- *Which families are you most familiar with? Which families have the tasks that require more thinking?*
- A valuable variation is to make families not by equal sum, but by similar computation strategy. *How can you find $3 + 4$? As a near-double? Does anyone else have a near-double expression? Let’s make a near-doubles family ...* Other families might be: doubles, +1, make 10, 5-plus. These families are not as clear-cut as the equal sum families. Some expressions might belong in more than one family. A table of additions with strategy families colour-coded can be a rich discussion point.