

IRVING INDEPENDENT SCHOOL DISTRICT COMPONENTS OF MATHEMATICS

Skills Instruction and Practice

Teacher models concept by:

- using concrete manipulatives
- drawing pictures of the manipulatives or objects
- using abstract representative (symbols & numerals)

Students apply skills through:

- using concrete manipulatives
- drawing pictures of the manipulatives or objects
- using abstract representation (symbols & numerals)

Teacher encourages students to explain/justify thinking:

- orally
- written form

Students actively respond and participate:

- orally
- written form

Teacher applies skills:

- in the context of a word problem as it relates to students' personal experiences

Teacher incorporates technology (i.e. calculators, PowerPoint, computer software) into the math lesson.

Students use technology (i.e. calculators, computer software)

Teacher models a 4-step problem-solving method:

- understand the problem
- make a plan
- carry out the plan
- evaluate the solution

Students apply a 4-step problem-solving method independently (i.e. verbalizing steps, underlining question, identifying important data, etc.)

Teacher models problem-solving strategies:

- drawing a picture (K-5)
- looking for a pattern (K-5)

- systematic guessing and checking (K-5)
- acting it out (K-5)
- making a table (3-5)
- working a simpler problem (3-5)
- working backwards (3-5)

Students select and apply problem-solving strategies independently through:

- drawing a picture (K-5)
- looking for a pattern (K-5)
- systematic guessing and checking (K-5)
- acting it out (K-5)
- making a table (3-5)
- working a simpler problem (3-5)
- working backwards (3-5)

Teacher encourages students to explain/justify thinking:

- orally
- written form

Students actively respond and participate:

- orally
- written form

Teacher models a process of logical reasoning: (using “if – then” reasoning or “eliminating” cases)

Students use logical reasoning as modeled by the teacher.