Draw a Large Family Group: Spacing, Overlap, and Relative Heights

Original tasks 1, 2 / complete keys

Task 1

A learner plans four figures with heights 9, 8, 6, and 3 grid squares. The tallest and shortest differ by 6 squares. Is this range more than half the tallest height? Show the arithmetic and state whether the range is moderate.

Answer: Half the tallest height is 9 divided by 2, which equals 4.5 squares. The range is 9 minus 3, which equals 6 squares. Since 6 is greater than 4.5, the range is more than half the tallest height and is not moderate for one family. Adjust one height, for example raise the shortest to 5 squares, giving a range of 4 squares.

Reason: The check compares the height range to half the tallest height using simple subtraction and division. A range greater than half the tallest height suggests the group may look like separate age groups rather than one family.

Check: Recalculate half the tallest height and the range. Confirm that the adjusted range is less than or equal to half the tallest height.

Task 2

Two adjacent figures are planned with widths 4 and 6 grid squares. They overlap by 2 squares. Is the overlap no more than one-third of the narrower figure's width? Show the arithmetic.

Answer: One-third of the narrower width is 4 divided by 3, which equals about 1.33 squares. The overlap is 2 squares, which is greater than 1.33 squares. The overlap exceeds the one-third guideline, so reduce it to 1 square or less, or move the figures apart.

Reason: The narrower figure's width sets the limit because it is the smaller shape being covered. Dividing by 3 gives the one-third threshold, and comparing the actual overlap shows whether the guideline is met.

Check: Recompute one-third of the narrower width and compare it to the planned overlap. Confirm the overlap is less than or equal to that value.

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Original tasks 3, 4 / complete keys

Task 3

A group has five figures. Planned overlaps are: pair 1 overlaps by 1 square, pair 2 overlaps by 2 squares, and the remaining adjacent pairs have clear gaps of 1 square each. Count the overlapping pairs and the clear gaps. Does the plan meet the mix of at least two overlaps and at least one clear gap?

Answer: There are two overlapping pairs and two clear gaps. The plan meets the mix because it has at least two overlaps and at least one clear gap. No adjustment is needed for the mix.

Reason: Counting pairs separately from gaps prevents confusing an overlap with a gap. The requirement is a minimum, so two overlaps and two gaps satisfy it.

Check: List each adjacent pair and label it overlap or gap. Count the labels and compare to the minimums of two overlaps and one gap.

Task 4

A foreground figure overlaps a background figure by 3 squares at the torso. The background figure's head is fully visible, but its left shoulder is covered. Does the background figure keep at least one clear identifying edge? Name the edge and state whether the overlap placement is acceptable.

Answer: Yes. The fully visible head is a clear identifying edge. The overlap at the torso is acceptable because it does not cover the face or hands, and the head remains visible. The covered shoulder is not a problem as long as the head edge stays clear.

Reason: The identifying-edge check asks whether at least one informative outline remains visible. A full head outline qualifies, while a covered shoulder alone would not.

Check: Trace the background figure's visible outlines and confirm at least one complete identifying edge, such as the head, remains uncovered.

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Source rubric / reflection

- [ ] Five to seven figures are placed on the page with a consistent height convention recorded in grid squares.
- [ ] At least two pairs overlap intentionally, and at least one clear gap remains between non-overlapping figures.
- [ ] Overlaps occur at torso or lower arm areas, leaving each overlapped figure with at least one clear identifying edge.
- [ ] Relative heights vary within a moderate range, and the tallest-minus-shortest difference is checked arithmetically.
- [ ] The group reads as one connected family unit rather than separate figures or a crowd.

Reflection: What did you check, what did you change, and what will you try next?