Day 31 · What is the whole?

Make a fair paper patch. How do you know its parts are equal?

Useful purpose: Name a whole before interpreting a half or quarter; equal number of pieces is not enough when their sizes differ.

1 · Find the starting point

Ask what "whole" means using one familiar paper rectangle. Offer four pieces: three small and one large. Ask whether choosing one necessarily gives a quarter. Notice reasoning before correcting.

2 · Prepare

Use one blank paper rectangle or the full described MODEL. Folding is optional; the child can direct a willing adult or describe boundaries. No food, scissors, purchase or sharing personal belongings is needed. Keep an unequal partition available as a counterexample.

3 · Brief worked model

MODEL: one rectangular notice panel is the whole. Divide it into four equal-width strips of the same height. One strip is 1/4 of this panel; two strips are 2/4. If the panel instead has strip widths 1,1,1,5 units, it still has four pieces, but one narrow piece is not 1/4 of its area. Equal-size parts matter. In the equal panel, 1/4 + 3/4 completes the same whole.

4 · A different guided try

Use a different square divided into two equal rectangles. Ask the child to name one half, then join both halves. Try a different unequal two-piece cut and ask what has changed. Accept explanation through pointing with exact neutral description, words, signing or an original drawing.

5 · Your own attempt

Choose a paper patch for a fictional notice, a described rectangle or your own safe paper. Name its whole, make/describe two or four equal-size parts and label one part. Keep your own response separate from the model. A helper may make your chosen lines; record who chose and who drew.

6 · Observe what was actually shown

Look for named whole, equality justified by matching dimensions/area and correct denominator. A neat cross alone is not evidence. Ask which part would be a unit fraction and why. Record physical folding only if actually performed.

Specific next teaching

If four pieces are automatically called quarters, compare another equal-width panel with an unequal partition. If secure, ask how two equal quarter parts can be represented without changing the whole.

Three choices you can switch between

1 · Make a notice patch

Choose two or four equal parts.

Make a paper or spoken plan for a notice panel. Match corresponding parts, name one half or one quarter and explain the equality check. Try with a willing reader only if wanted; an untested plan remains a plan.

Evidence/observation: Own partition and explanation; adult drawing/folding recorded separately.

Specific next teaching: Use a differently shaped whole and ask what must still be equal.

2 · Spot the unfair split

Does four pieces mean four quarters?

MODEL strip widths are 2,2,2,6 units at one height. Explain why one 2-unit strip is not a quarter of the 12-unit-wide panel; redraw four 3-unit strips if wanted.

Evidence/observation: Supplied area reasoning, not an actual measurement or cut.

Specific next teaching: Return to two equal parts if equality is unclear; later try a new unequal four-part panel.

3 · Same fraction, different whole

Could both be halves?

MODEL whole A has width 8 units and whole B width 12 units, at the same height. Each is split into two equal parts. Their 4-unit and 6-unit parts are each a half of their own whole, but not equal physical areas.

Evidence/observation: Relationship to each named whole, not a claim that every half has one size.

Specific next teaching: Ask what would have to stay the same to compare the sizes of two half-parts directly.

Short child start · Ordinary cues/full alternatives · Adult preparation

Original SubjectNest educational words and presentation: CC BY 4.0. Full source, legal, font and no-image companions are embedded. Keep their separate terms with any edited copy and mark changes. Supplied examples are models; no learner result is implied.