

Teacher Guide

Organizing Things into Categories • one day, 9:30–2:00 • book pp.43–49

One-line goal: Things that belong together get put together — a category is two or more things sharing a similarity or purpose, the same stuff can be sorted many right ways, and sorting is the first tool of every scientist.

Prerequisites: none — this is the first lesson in the kit, and the place the habit of sorting begins. Everything later leans on it.

KEY CONCEPTS (DON'T MISS THESE)

- **A category is two or more things that share a similarity or purpose** (the book's key point). Not a place, not a box — a *belonging-together*.
- **The same set sorts many right ways** — by color, size, material, use. There is no single right way; we choose the sorting that suits our purpose.
- **Categories nest.** Groceries → fresh produce → fruits / vegetables — and small groups combine into bigger ones. The word is **subcategory**.
- **An attribute is the thing you notice.** Change the attribute and the same objects land in different groups.
- **Organization powers memory and thinking** — the Memory Tray proves it with the kids' own numbers.
- **The grown-up world is pre-sorted** (stores, libraries, kitchens); noticing it is the send-home.
- **Sorting is what scientists do with observations** — collect, organize, and patterns (and gaps) appear.

VOCABULARY

Key terms: category • organize • sort • attribute • group • subcategory

Copywork (binder sheet, printed): sort • group • category • organize

Kid-sized definitions, used identically everywhere: *sort* — putting things into groups • *group* — things put together in one place • *category* — things that belong together • *organize* — putting everything in its place • *attribute* — the thing you notice: color, size, or use • *subcategory* — a group inside a group.

OPENING ORATION — THE SECRET EVERY SCIENTIST USES FIRST (9:30 · ~3 min)

Prop: the covered junk-drawer tray — **dumped dramatically** at the marked moment. Full text printed as *Opening Oration.pdf* in this folder; the beats:

- “The grocery store, the library, and your bedroom share a secret...” — then the **DUMP**: a pile where everything is present and nothing can be found.
- The store/library/bedroom tour: thousands of things, each findable in a minute — because **things that belong together get put together**.
- Name the words: *category, sorting, organizing*. Promise the memory-game proof for later.
- The scientist’s first tool: sort the jumbled world and it starts to make sense. Close: “there’s more than one right way” — and hand them the pile.

ACTIVITIES (KIDS DO)

A1 · The Big Sort — Card 1

9:45 · 30 min · card: *experiment-cards/01-the-big-sort.pdf*

The oration’s pile + the sorting set. Say only “**put together what belongs together**” and stay quiet. Ask WHY as groups form; letter a label card per named category; museum-walk and tally onto the worksheet FRONT. Then **mix it all back up** and re-sort by a different attribute. Record the favorite sort on the mat and finish “my categories are ... because ...”.

Say: “Was the first way right? Was the second way right? BOTH were — the things never changed, only the thing we noticed. We pick the sorting that suits our purpose.”

Failure modes: one child dominates — private muffin tins first, merge after. A “fits nowhere” pile — celebrate it, that IS a category. Sorting stalls into play — a bowl in each child’s hands restarts it.

A2 · Hula-Hoop Floor Venn — Card 3

10:40 · 25 min · card: *experiment-cards/03-hula-hoop-venn.pdf*

Two hoops APART, labelled *things made of wood* / *things that are red*. Kids place objects, saying why — until the planted **red wooden block** forces the crisis. Slide the hoops together; the block stands in the overlap; letter the BOTH card. Swap a label and watch the middle change. Name it: a **Venn diagram**.

Say: “A thing can belong to TWO categories at the same time — it just stands in the middle.”

Failure modes: no genuine both-objects = dead overlap — plant 3–4 on purpose. Hoops drift — tape the crossing points.

A3 · Memory Tray Game — Card 4

11:05 · 25 min · card: [experiment-cards/04-memory-tray-game.pdf](#) · log: [student-binder/04 Number Log.pdf](#)

Round 1: 60 seconds of looking, cover, 2 minutes of recall in turns — tally, count, **shade the Round 1 bar**. Teach the secret with the tray visible: sort into categories, **one category per finger**. Round 2 on the re-stocked tray, looking category by category; recall by walking the fingers; shade the Round 2 bar. Compare.

Say: “Your memory didn’t grow in ten minutes. You ORGANIZED what you saw — and the categories carried the things for you. Organizing is a tool for your MIND.”

Failure modes: pre-counters — pair with an older “recorder” or shade as a group. One child dips in round 2 — compare GROUP totals (they almost never fail). Chaos-calling — turns around the circle, one item each.

A4 · Real-World Sorting Walk — Card 6

12:40 · 30 min · card: [experiment-cards/06-sorting-walk.pdf](#)

Ten minutes outdoors collecting best-four finds; pool with kitchen items to 15–20. The group argues out a scheme, sorts, labels, counts — then re-sorts a different way. Finish by catching the house’s hidden sorts: silverware drawer, pantry, bookshelf, toolbox. Optional: sort the laundry.

Say: “Every drawer in this house is somebody’s category. Today you started seeing them — and you will never stop.”

Failure modes: collections bloat — cap at best four. Weather — recycling bin + sock drawer instead. Kitchen leg becomes snacking — sort unopenable things.

EXPERIMENTS (TEACHER RUNS, KIDS WATCH → DEDUCE → DISCUSS)

E1 · Guess My Rule — Card 2

10:15 · 15 min · card: [experiment-cards/02-guess-my-rule.pdf](#)

Silently sort objects into two groups while kids watch and whisper. The ? card opens guessing; test every guess against the evidence. Round 2 uses a sneakier rule — **purpose, not appearance** (things for drawing vs. things for holding stuff together). Round 3: a kid sorts, you guess (wrongly, once, charmingly).

Say: “You couldn’t SEE my rule — it was in my head. But every object I placed was a CLUE. Watching carefully and guessing the hidden rule is exactly what scientists do all day.”

Failure modes: hard rule too early kills guessing — open with color or size. Shouting mid-sort spoils deduction — the ? card is the only talking signal. Round-3 sorter’s rule secretly random — they whisper it to you first.

E2 · Categories Within Categories — Card 5

11:30 · 20 min · card: [experiment-cards/05-categories-within-categories.pdf](#)

ALL FOOD at the top of the board; branches grow as kids direct (produce · cereals · milk things · cans); produce splits again into FRUITS and VEGETABLES — a **subcategory**. Prediction game: each food prop walks its path (all food → produce → fruits). Run it upward too: combining is sorting’s reverse gear. At 11:50 the kids letter the same tree on the worksheet BACK.

Say: “A category can live INSIDE a bigger category — fruits live inside produce, produce lives inside food. A group inside a group is called a subcategory.”

Failure modes: more than two levels = a thicket — stop. Prop moves only when the group points the same path. Pre-readers: tiny icon in every bubble.

STRETCH (ranch, adult-run — NOT part of the core day):

- **Egg-Grading Station** — weigh real eggs on the grading scale, sort S/M/L/Jumbo cartons; the same eggs could also sort by color or cleanliness. A working category system the family runs weekly.
- **Museum Re-Sort** — bones, rocks, feathers, insects curated into the specimen cabinet + riker mounts; the kids invent this season’s scheme and re-sort each season — “no single right way” as a standing exhibit.
- **Label maker + laminator** — weatherproof kid-lettered labels for every drawer and mount: the difference between a pile and a collection.

PROMPTS & QUESTIONS (USE ALL DAY — FROM THE BOOK, PP.44-47)

- What makes these belong together? Could ANY two things share a category?
- Is there another way to sort this same pile? A third? Which way is “right”?
- How would shoppers find anything if the store were one giant jumble? How would the manager know what to restock?
- What is your bedroom’s sorting system? Who chose it? Would you choose differently?
- (Memory tray) Where were the categories — on the tray, or in your head?
- Can one thing belong to two categories at once? Where does it stand?
- What is a group inside a group called? Walk the apple’s address, branch by branch.
- (Puzzle prompt, p.47) Why sort puzzle pieces by edge and color first? What appears once they’re sorted?
- What does a scientist collect — and what do they do with it next?

WHAT TO WATCH FOR IN DAILY LIFE (SEND HOME — FROM THE BOOK'S "TO PARENTS")

- At the grocery store: *what category are we standing in? how did the store sort its aisles?* Let the child navigate to a food by walking its categories.
- The silverware drawer, the toolbox, the closet: *what attribute is this sorted by?*
- Sorting laundry — the child runs the scheme (by owner? color? kind?) and defends it.
- Clean-up time IS the lesson: "everything back in its category" — assign each child one category to put away (book's tip, p.47).
- At bedtime, recall the day in categories — fun things, food things, learning things.
- Find one thing at home that could be sorted a second way — and re-sort it.

SUPPLIES TO GATHER

Full list with prices: *Supply List.md* (~\$55 new spend). Headlines: sorting/counting objects set · 2–3 hula hoops or 50-ft rope · sorting trays/bowls or muffin tins · blank floor cards + chunky marker · two prepped trays (oration dump + 20-item memory tray) · both-category trap objects · pantry food props.

PREP-AHEAD CHECKLIST

A few days before

- ☐ Order/gather TO-BUY supplies (Supply List, ~\$55)
- ☐ Print binder sheets ×5 (B&W), six cards ×1 (B&W), posters ×1 each (color 12×18)

The night before (out of the kids' sight — both trays are surprises)

- ☐ Load the oration junk-drawer tray; cover it
- ☐ Load the 20-item Memory Tray; cover it; stage the round-2 re-stock stash
- ☐ Cut/stack blank floor label cards; test the chunky marker
- ☐ Stage hoops/rope circles; plant the both-category traps (red wooden block, red pencil, wooden spoon)
- ☐ Stage E2 food props: apple, banana, carrot, potato, cereal, milk, can, bread

The morning of

- ☐ Tray + cloth beside your circle spot; timer in pocket
- ☐ Muffin tins/bowls + worksheet FRONTS on the table; Number Logs + pencils staged
- ☐ Whiteboard wiped; baskets by the door for the 12:40 walk

REVIEW HOOKS

- **Back:** the Montessori sorting shelf work (color/shape) and Gran's seed sorting — today they get their grown-up names: *category, attribute*.
- **Forward:** A-2 sorts the whole world into solid/liquid/gas — "next time we sort EVERYTHING into just three categories." B-2/B-3 sort all living things; A-5 sorts by material; D-4's biome sort (if already taught) is this skill at landscape scale.

CORRELATED READ-ALOUDS (BOOK P.49, OPTIONAL)

Aboff, *If You Were a Set* · Mariconda, *Sort It Out!* · Marks, *Sorting by Color / by Size / Money / Toys* · Wong, *"L" Is for Library*.

Opening Oration

The Secret Every Scientist Uses First • read aloud, ~3 minutes

Prop: A tray loaded with genuine junk-drawer miscellanea — pencils, paper clips, coins, buttons, string, a spoon, toy pieces, rubber bands. Keep it covered beside you. At the marked moment, **dump the whole tray out on the floor in the middle of the circle**, dramatically, and let the clatter do its work. (Prep: load it the night before, out of the kids' sight; cloth over it until the moment.)

I'm going to tell you a secret this morning. It's a secret that the grocery store knows, and the library knows, and — believe it or not — your own bedroom knows. All three of them share the very same secret. And it is the first tool every scientist ever uses.

But before I tell you, I have to show you a problem.

(Whip the cloth off and DUMP the tray onto the floor. Let everything clatter and roll. Pause. Look at the mess with them.)

Look at that. What a jumble! Pencils and coins and buttons and string, all tangled up together. Now — suppose I need one paper clip. Where is it? Suppose you need the little spoon. Can you find it fast? Everything is here, but *nothing can be found*. A pile like this is almost like having nothing at all.

Now think about the grocery store. The grocery store has a hundred times more things than this tray — thousands and thousands of things! But is it a jumble on the floor? No! Every apple sits with the apples. Every cereal box stands with the cereals. The milk lives with the milk. You could walk in and find one tiny thing in one minute — out of thousands!

And the library — so many books! But every book has its own shelf, with its own family of books, and the librarian can walk straight to any one of them. And your bedroom — when it's picked up — the shirts live in the shirt drawer, and the blocks live in the block bin, and your shoes sit with the shoes.

So here is the secret they all share: **things that belong together get put together**. A bunch of things that belong together has a name — a *category*. And putting things into their categories has a name too — *sorting*, or *organizing*. When things are organized, you can find them, you can count them, and you can even remember them better — I'll prove that part to you later today with a game.

And why do I call it the scientist's first tool? Because that is exactly what a scientist does! A scientist looks at a great big jumbled world — rocks and bugs and stars and bones — and starts to sort: *these belong together... those are different...* And the moment the sorting starts, the world begins to make sense.

Today, this mess is ours. We are going to sort it — and here's the best part — there's more than one right way to do it.

(Gesture at the pile, and let them start telling you what belongs together.)

A-B-1 Supply List — Organizing Things into Categories

Everything for the full 9:30–2 day. Prices are rough. Nothing here has a long lead time, but the **two trays must be assembled the night before, out of the kids' sight** — the Memory Tray only works as a surprise.

ALREADY HAVE (TYPICAL HOUSEHOLD)

☐	ITEM	USED IN
☐	A "junk drawer" tray of miscellanea (pencils, clips, coins, string, buttons...)	Oration prop — dumped dramatically
☐	A second tray + a cloth to cover it, loaded with 20 miscellaneous small items	A3 Memory Tray (Card 4)
☐	Extra miscellanea stash (out of sight) to re-stock the tray for round 2	A3 Memory Tray (Card 4)
☐	Whiteboard or big paper + marker	E2 tree diagram (Card 5) · tally counts
☐	Muffin tin(s) and/or small bowls	A1 Big Sort (Card 1) · A4 walk sort
☐	A basket or bag per child	A4 Sorting Walk (Card 6)
☐	Kitchen timer or phone	A3 Memory Tray (60 s look / 2 min recall)
☐	Laundry basket of clean unsorted laundry (optional follow-through)	A4 / closing block
☐	Yarn or string (circle-making fallback)	A2 Floor Venn (Card 3)
☐	"Both-category" trap objects: a red wooden block, a red pencil, a wooden spoon	A2 Floor Venn (Card 3) — planted so the overlap earns its keep
☐	6–8 food props from the pantry (apple, banana, carrot, potato, cereal box, milk, a can, bread)	E2 tree diagram (Card 5)
☐	Index cards or card stock, cut blank	floor label cards (teacher letters them live)
☐	Pencils + the printed binder sheets (worksheet, Number Log)	A1, A3 recording

TO BUY

☐	ITEM	QTY	~PRICE	WHY	ORDER AHEAD?
☐	Sorting/counting objects set (mixed buttons, bears, gems, shells)	1 big set	\$20	A1 Big Sort + E1 Guess My Rule — enough pieces that five kids sort at once	Yes — needed on the day
☐	Hula hoops (or a 50-ft soft rope to lay as circles)	2–3	\$15	A2 Floor Venn — two overlapping circles kids can stand in	Yes
☐	Small sorting trays / bowls set (or a second muffin tin)	1 set	\$12	A1 + A4 — one landing spot per category	Yes
☐	Large blank floor cards + a chunky marker	1 pack	\$8	Category labels the teacher letters live; one card marked BOTH for the Venn overlap	Yes
☐	(optional) Montessori sorting bowls • felt Venn mat • a dedicated junk-drawer prop tray	—	—	Nice-to-haves; hoops + tins + any tray do the same jobs	No

Total new spend: ~\$55.

STRETCH PURCHASES (ONLY IF PURSUING THE RANCH INSTALLS — SEE TEACHER GUIDE STRETCH)

☐	ITEM	~PRICE	FOR
☐	Egg-grading scale + graded cartons	~\$30	Weigh & sort your own or a local farm's real eggs S/M/L/Jumbo — a working category system
☐	Specimen cabinet or printer's tray + riker mounts	~\$60 + \$10 ea	Permanent natural-history museum the kids re-sort each season
☐	Label maker + laminator	~\$50	Weatherproof kid-lettered drawer labels — the difference between a pile and a collection

Tick the box beside each item as it goes in the box. Anything flagged **order ahead** ships — buy it a week before the lesson.