Research-based Patterning

1. MISSING ITEM AB
   Place pattern (rhombus, triangle, rhombus, _____, rhombus, triangle) in front of the child. Place the divided container closer to your side of the table. Say:
   I made a pattern with these blocks, but a piece fell off. [Point to the open space in pattern.] Help me find the piece that belongs there. [Push container to the child.]
   If child seems confused about what to do with extra blocks:
   Remember, you won’t need to use all the blocks.

   *Keep divided container out for Items 1-7.

2. COPY ABAB
   Place pattern (triangle, rhombus, triangle, rhombus, triangle, rhombus) in front of the child. Say:
   I made a pattern with these blocks. [Gesture to model pattern from child’s left to child’s right.] Please make the same kind of pattern here. [Gesture in front of the child approximately 5-6 inches below the model pattern.] You won’t need to use all the blocks. [Push container with pattern pieces toward child so he can reach.]
   If the child attempts to make the pattern directly above or below your pattern, gesture again and remind them:
   Make your pattern down here.
   If child seems confused about what to do with extra blocks:
   Remember, you won’t need to use all the blocks.
   If the child stops before finishing the first unit of the pattern, say:
   Can you keep going?
   (Say only once. If child stops again before finishing first unit, say: Ready for the next one?)

   Scoring: 1 if child completed at least 1 full unit with no errors anywhere in the pattern. Can start with trapezoid or rhombus and orientation of blocks does not matter (e.g., rhom, triangle, rhom, triangle is correct – first item does not have to be beginning of pattern unit).

   [This scoring is repeated for all items except Memory ABB and Smallest Tower]

   Thanks for working so hard on this. Are you ready for another one now? [Prompts after each item can be ad-libbed; do not give direct feedback such as “good job!”]

3. EXTEND AB
   Place pattern (square, triangle) in front of the child. Say:
I made a pattern with these blocks. [Gesture to model pattern.] Finish my pattern here the way I would. [Gesture to right of pattern. Push container with pattern pieces toward child so they can reach.]

If child attempts to make the pattern directly above or below your pattern, gesture again and remind them:

Make your pattern over here.

If child seems confused about what to do with extra blocks:

Remember, you won’t need to use all the blocks.

If the child stops before finishing the first unit of the pattern, say:

Can you keep going?

4. COPY AABB

Place pattern (trapezoid, trapezoid, rhombus, rhombus) in front of the child. Say:

I made a pattern with these blocks. [Gesture to model pattern from child’s left to child’s right.] Please make the same kind of pattern here. [Gesture in front of the child approximately 5-6 inches below the model pattern.] You won’t need to use all the blocks. [Push container with pattern pieces toward child so he can reach.]

If the child attempts to make the pattern directly above or below your pattern, gesture again and remind them:

Make your pattern down here.

If child seems confused about what to do with extra blocks:

Remember, you won’t need to use all the blocks.

If the child stops before finishing the first unit of the pattern, say:

Can you keep going?

(Say only once. If child stops again before finishing first unit, say: Ready for the next one?)

Scoring: 1 if child completed at least 1 full unit with no errors anywhere in the pattern. Can start with trapezoid or rhombus and orientation of blocks does not matter (e.g., rhom, trap, trap, rhom, rhom is correct – first item does not have to be beginning of pattern unit).

[This scoring is repeated for all items except Memory ABB and Smallest Tower]

5. COPY AAB

Place pattern (square, square, rhombus, square, square, rhombus) in front of the child. Say:

I made a pattern with these blocks. [Gesture to model pattern from child’s left to child’s right.] Please make the same kind of pattern here. [Gesture in front of the child approximately 5-6 inches below the model pattern. Push container with pattern pieces toward child so he can reach.]

If the child attempts to make the pattern directly above or below your pattern, gesture again and remind them:

Make your pattern down here.
If child seems confused about what to do with extra blocks:

**Remember, you won’t need to use all the blocks.**

If the child stops before finishing the first unit of the pattern, say:

**Can you keep going?**

6. **EXTEND ABB**

   Place pattern 3 (rhombus, triangle, triangle) in front of the child. Say:

   **I made a pattern with these blocks.** [Gesture to model pattern.] **Finish my pattern here the way I would.** [Gesture to right of pattern. Push container with pattern pieces toward child so they can reach.]

   If child attempts to make the pattern directly above or below your pattern, gesture again and remind them:

   **Make your pattern over here.**

   If child seems confused about what to do with extra blocks:

   **Remember, you won’t need to use all the blocks.**

   If the child stops before finishing the first unit of the pattern, say:

   **Can you keep going?**

   **Scoring:** Same as copy, but for extend items, must start with rhombus.

7. **EXTEND AABB**

   Place pattern 4 (triangle, triangle, trapezoid, trapezoid) in front of the child. Say:

   **I made a pattern with these blocks.** [Gesture to model pattern.] **Finish the pattern here the way I would.** [Gesture to right of pattern. Push container with pattern pieces toward child so they can reach.]

   If child attempts to make the pattern directly above or below your pattern, gesture again and remind them:

   **Make your pattern over here.**

   If child seems confused about what to do with extra blocks:

   **Remember, you won’t need to use all the blocks.**

   If the child stops before finishing the first unit of the pattern, say:

   **Can you keep going?**

   **Remove divided container box and start using small containers for each item.**

8. **ABSTRACT TO SHAPE AABB**

   Place pattern 5 (green cube, green cube, purple cube, purple cube) in front of the child. Place the source set of 5 neutral stars and 5 neutral triangles in a container closer to your side of the table. Say:

   **I made a pattern with these blocks.** [Gesture to model pattern.] **Use some of these shapes to make the same kind of pattern here.** [Gesture 5-6 inches below model pattern. Push container with pattern pieces toward child so he can reach.]

   If the child tries to make the pattern directly above or below your pattern, move the beginning of their pattern to 5-6 inches below the model pattern and remind them:
Make your pattern down here.
If the child stops before finishing the first unit of the pattern, say:
Can you keep going?

9. ABSTRACT TO COLOR ABB
Place pattern 6 (hexagon, triangle, triangle) in front of the child. Place the source set of 5 red cubes and 5 blue cubes in a container closer to your side of the table. Say:
I made a pattern with these blocks. [Gesture to model pattern.] Please make the same kind of pattern here, using some of these cubes. [Gesture 5-6 inches below model pattern. Push container with pattern pieces toward child so he can reach.]
If the child tries to make the pattern directly above or below your pattern, move the beginning of their pattern to 5-6 inches below the model pattern and remind them:
Make your pattern down here.
If the child stops before finishing the first unit of the pattern, say:
Can you keep going?

10. ABSTRACT TO COLOR AABB
Place pattern 7 (square, square, triangle, triangle) in front of the child. Place the source set of 5 yellow cubes and 5 purple cubes in a container closer to your side of the table. Say:
I made a pattern with these blocks. [Gesture to model pattern.] Please make the same kind of pattern here, using some of these cubes. [Gesture 5-6 inches below model pattern. Push container with pattern pieces toward child so he can reach.]
If the child tries to make the pattern directly above or below your pattern, move the beginning of their pattern to 5-6 inches below the model pattern and remind them:
Make your pattern down here.
If the child stops before finishing the first unit of the pattern, say:
Can you keep going?

11e. Memory Practice item (don’t score)
We are going to play a memory game, so try to remember the pattern exactly like you see it, with the same number of blocks in the same places as mine. You’ll use these blocks [Place the source set of 3 triangles and 3 squares in a container closer to your side of the table]. When I take away the pattern, I want you to use these blocks [point to container] to make the same pattern as mine, with the same number of blocks in the same places as mine.

I’m going to show you my pattern now and I want you to look at it really carefully. [Place practice pattern (triangle, square, triangle, square) in front of the child. Let them look for 5 seconds. If child isn’t looking, prompt them to look. After 5 seconds, push container with pattern pieces toward child so he can reach.]
If child seems confused about what to do, repeat Make the same pattern as mine.
Do not give feedback on child’s performance on practice item. Clear away practice pattern and blocks.

11. MEMORY ABB

Are you ready for another memory game? Try to remember the pattern exactly like you see it, with the same number of blocks in the same places as mine. You’ll use these blocks [Place the source set of 5 hexagons and 6 trapezoids squares in a container closer to your side of the table]. When I take away the pattern, I want you to use these blocks [point to container] to make the same pattern as mine, with the same number of blocks in the same places as mine.

[Place pattern 8 (hexagon, trapezoid, trapezoid) in front of the child. Let them look for 5 seconds. If child isn’t looking, prompt them to look. After 5 seconds, push container with pattern pieces toward child so he can reach.]

Scoring: 1 point if child completes EXACTLY 2 full units of the pattern, as in model. Must be ABB pattern, but still correct if reverse the blocks (i.e., trapezoid, hexagon, hexagon is ok too).

12. SMALLEST TOWER AAB

Show the child 3 small towers (AB, AB, AB, each green, white, with green on the bottom). Say:

Look at my small towers. They each go “green, white; green, white; green, white.” I can put them together to make a big tower with a green-white pattern. [Put towers together as you say this.]

Clear away the green-white tower. Place 4 red and 4 blue unconnected cubes in a container closer to your side of the table. Say:

What is the smallest tower you could make and still keep the same pattern as this? [Show the child an AABAAB (red, red, blue) tower as you say this.]

Show me with these cubes. [Push container with pattern pieces toward child so he can reach.]

Do not let the child build on top of your tower.

If the child tries to make a tower as tall or taller than yours, say (first time only):

Your tower should be smaller than mine. What is the smallest tower you could make and still keep the same pattern as this? [Gesture to model tower.]

Scoring: 1 if the child built a red, red, blue tower using three cubes