

Piper Fine-Motor Activity Challenges (PF-MAC)



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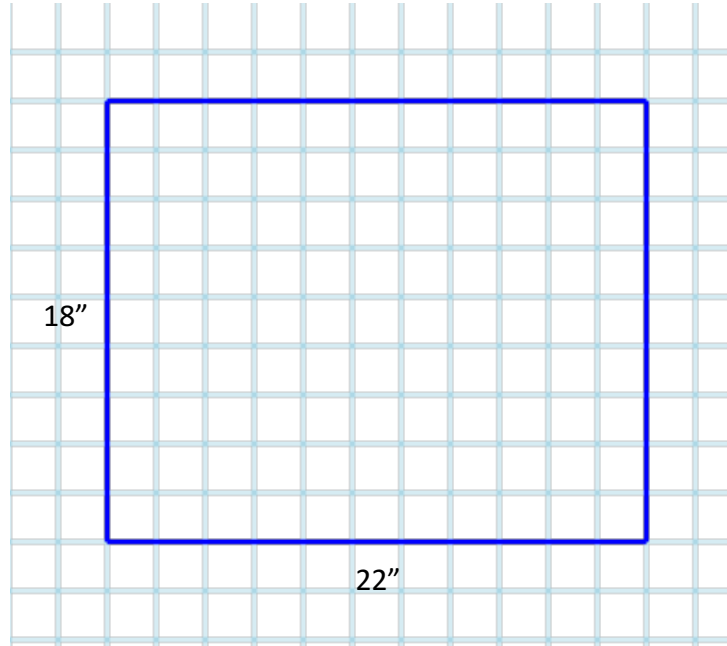
Description:

The PF-MAC is a module that allows the client to focus on fine motor coordination and dexterity. The PF-MAC has several different activities that the therapist has the option to set up or allow the client to choose from. This module is designed to allow the therapist to work with their client to address performance components in a fun and meaningful way. Some of these activities include nuts, bolts, and washers, marbles, checkers, chess, tic-tac-toe, lacing, rubber-band stretch, peg cognition test, mirror therapy and tool use activities. These activities may be adapted to provide the client with a “Just right challenge” by using the PF-MAC in a horizontal, vertical, or angled position. The therapist and the client may (and are strongly recommended to) create additional games and find additional uses besides the brief set of activities listed in this booklet.

Schematics:

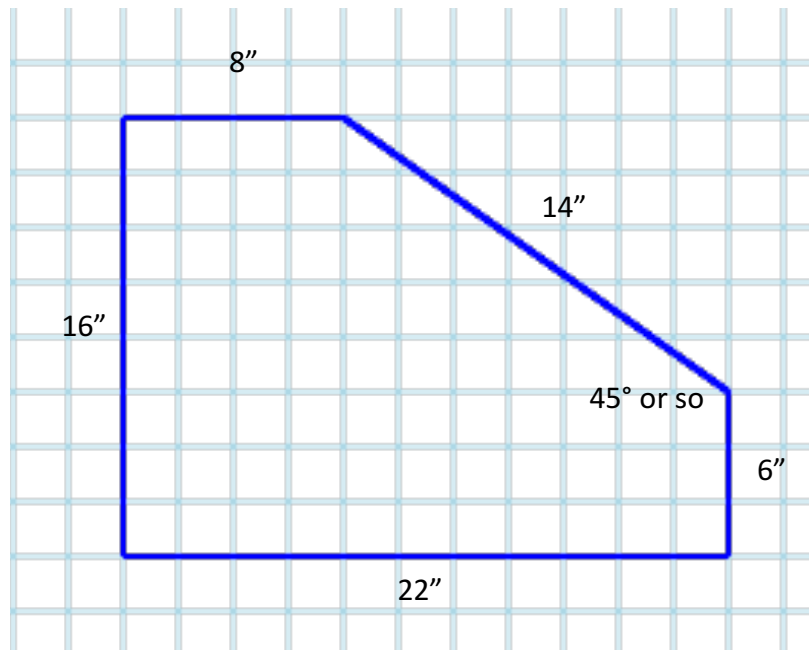
Tabletop (Flat Surface)

Fig. A



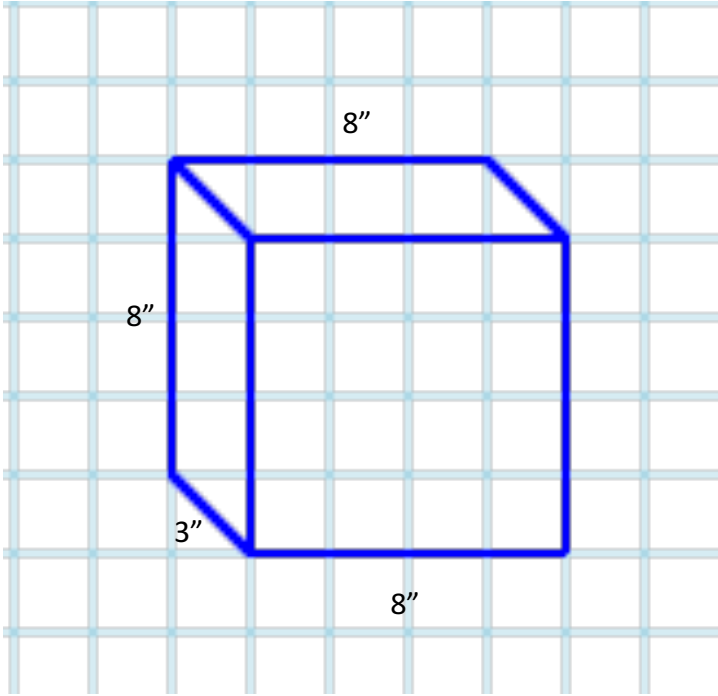
Side Pieces (x2)

Fig. B



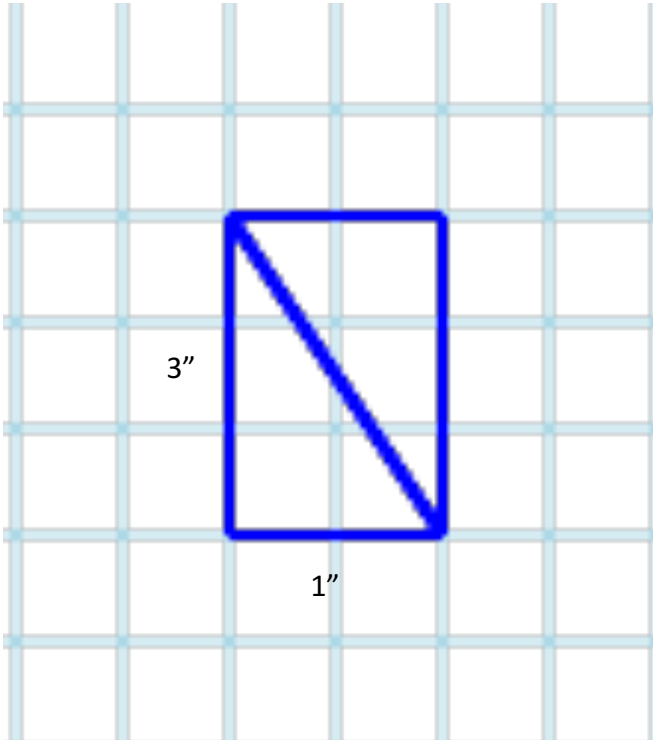
Box (x2)

Fig. C



Box Hangers (x4)

Fig. D



Tools Used:

- Table-Saw
- Jig-Saw
- Measuring Tape
- Pencil
- Sand Paper
- Drill
- Drill Bit Set
- Wood Burning Kit (for chess pieces or you may purchase them)

Materials Used:

- Wood Screws
- Painter's Tape
- Red and Black Spray Paint
- Wood Sealant
- Dowel Rod

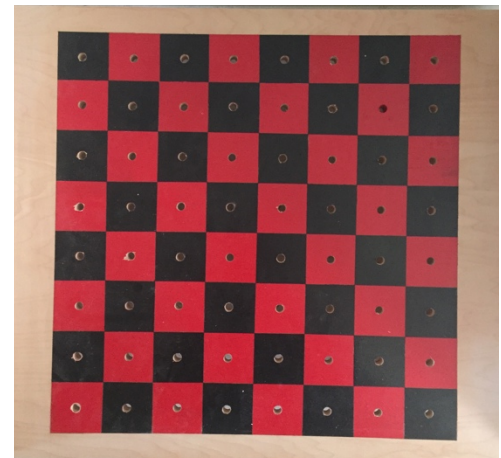
Activity Components:

- Checkerboard (on tabletop)
- Bolts
- Nuts
- Washers
- Knobs
- Wingnuts
- Pliers
- Philips Head Screwdriver
- Flat Head Screwdriver
- Crescent Wrench
- Shoe Laces
- Golf Tees
- Marbles
- Shelf-pins
- Rubber bands
- Checkers/Chess Pieces

Step by Step Instructions

Main Module

1. Measure and cut wood to length using the table-saw. Cut (1) figure A, (2) figure B, (2) figure C, and (4) figure D. To cut Fig. D you will need to turn the table-saw blade to a 45-degree angle.
2. Sand all pieces of cut wood lightly with 200 grit sandpaper
3. Drill three holes into Fig. B (side pieces) where it will join with Fig. A (tabletop).
4. Drill wood screws into Fig. B so that it attaches to Fig. A through the holes previously drilled. Apply thin layer of wood glue to edge before screwing together.
5. Repeat Steps 3 and 4 for the next side piece.
6. Assemble the boxes (Fig. C) and screw together after applying wood glue.
7. Take one half of Fig D. and attach it to the back of the box at the top. Next take another half and attach to the bottom of the box.
8. Take one of the other halves of Fig. D and attach to the top of the side piece. Next take the remaining half and attach it to the corresponding location on the side piece to fit to the other half of the box.
9. Repeat Steps 7 and 8 for the other side of the side piece and the remaining box.
10. Measure and draw a checkerboard on the tabletop piece. The checkerboard will have 64 squares that are 2" x 2".
11. Using the painters tape, cover up "every other" square to make a checkerboard pattern.
12. Spray paint checkerboard with red or black after covering the rest of the table and side pieces with a cloth to block unwanted spray paint.
13. After paint dries, remove tape and then tape over the squares that were just painted.
14. Spray the board with the opposite color paint and allow to dry before removing.
15. Drill holes in the middle of the checkerboard squares that will allow the bolts to go through.
16. Drill holes in the underside of the table top for the peg game and tic tac toe board (also the shelving pins). **This is tricky because you only need to drill halfway through the board instead of fully through to not mess the checkerboard up!!!**
17. Apply 2-3 coats of sealant to entire piece.



Checker/Chess Pieces

1. Measure and cut 32 checker pieces that are $\frac{1}{2}$ "inch width.
2. Sand lightly
3. Draw chess piece designs on one side of each piece
4. Woodburn chess design
5. Place chess design face down and spray paint 16 black and the other 16 red (or whichever color you choose)
6. Allow to fully dry then spray 2-3 coats of sealant
7. Flip all pieces over and apply 2-3 coats of sealant to this side as well



Activities

All of these activities may be graded by sitting/standing position. Several activities can be graded by changing the angle of the board (vertical, horizontal, or angled). Other activities can be graded by blocking vision. Therapist can create additional ways to grade up or grade down activities dependent on client needs for their “Just right challenge”. All activities can be used as measureable outcomes for the client by recording the time it takes to complete the activity, number of correct/incorrect items, etc.

- **Bolt Placement:** Client practices placing bolts into the holes that are drilled throughout the module. This activity could be timed and could be used as a measureable outcome. Performance Components: By picking up the bolt the client works on regulation of emotions, finger dexterity, motor planning, and touch. When placing the bolt into the holes the client is also working on spatial relations. There are many other components addressed that are not mentioned here as are for the rest of the activities that follow.
- **Bolt Placement + washers, nuts, or wingnuts:** Client does same activity as above but with the addition of applying washers and nuts to the end of the bolt. This could also be measured and timed for measurable outcomes. Performance Components: By picking up the bolt and placing the washers and nuts on it the client is addressing delay of gratification, in-hand manipulation, categorization, pressure discrimination, and depth perception.
- **Bolt Pickup:** Client can practice undoing nuts, washers, and bolts and placing back into bag. May also be measured and timed. (Similar to Moberg Pickup Test components) Performance Components: By picking up and undoing the bolts and nuts and placing them back in the bag the client is addressing self control, grasp patterns, eye hand coordination, categorization, and touch.
- **Blind Bolt Pickup/Placement:** Client is blindfolded or has eyes closed and must undo or place bolts in corresponding holes or back in the bag. Performance Components: This activity works on conscientiousness, reflex, concentration, proprioception, and stereognosis when the client is not using their vision to complete the task.
- **Screw/Unscrew bolt from nut:** Client uses one of the screwdrivers to screw or unscrew the bolt while holding the bolt with the other hand underneath or using the crescent wrench. Performance Components: This activity addresses role performance, finger dexterity, coordination, decision making, and depth perception when holding and using the screwdriver with the bolt.

- Checkers: Client and therapist may play the classic game of checkers.
Performance Components: Checkers works on socialization, impulse control, reach, orientation, and spatial relations during the normal game sequence of moving pieces and playing against an opponent.
- Chess: Client and therapist may play the classic game of chess.
Performance Components: Chess addresses conflict resolution, grasp patterns, recognition, touch, and vision when moving game pieces and thinking about possible moves.
- Color matching: Client can match the colored checker pieces to the same color of the game board (or opposite if asked).
Performance Components: This activity may address frustration tolerance, bilateral integration, memory, categorization, and sensory processing when placing the colored piece on a matching or opposite square.
- Checker flipping: Client can flip checkers over in a row as fast as possible until all are flipped over. (Similar to Minnesota Manual Dexterity Test)
Performance Components: This activity addresses coping skills, crossing midline, endurance, termination of activity, and self regulation when the client is reaching to flip over pieces with their hand.
- Marble checkers: Client and therapist play checkers using marbles instead of checker pieces.
Performance Components: A client doing this activity may work on improving frustration tolerance, self esteem, grasp patterns, fine motor movements, and motor planning when they have to grasp the marble to move it to another square.
- Marble Race: Client can place or pick up marbles from/to the tabletop as fast as possible against their own time or against the therapist.
Performance Components: This activity could be used to address social interaction, muscle endurance, following direction, kinesthesia, and vision when the client is racing another person by picking up the marbles as fast as they can.
- Chess Match Game: Therapist turns chess pieces face-down on the checkerboard. Client must match two pieces then remove if they are successful. They can only flip over two pieces at a time. If client is incorrect they must flip pieces back over face-down.
Performance Components: By flipping over and trying to match the pieces the client can work on frustration tolerance, motivation, finger dexterity, memory, and judgment.

- **Peg IQ Test (Triangle):** Client starts with all pegs in triangle except the top one. Client must move pegs over another to an empty spot then take the peg that was “jumped” out. The goal is to have one peg left in the triangle at the end.
Performance Components: By playing this game and moving the pieces and thinking of moves to make the client works on confidence, coordination, problem solving, touch, and depth perception.
- **Tic Tac Toe:** Client and therapist play the classic game of Tic Tac Toe using pegs.
Performance Components: By playing this game against someone else with pegs the client can work on regulation of emotions, fine motor movements, logical/coherent thought, vision, and kinesthesia.
- **Rubber band Stretch:** Client places shelf pins in the holes (underside of board) and then can stretch rubber bands around the pins creating designs.
Performance Components: This activity can allow the client to be creative and work on stress/anxiety relief, expression of emotion, concept formation, sensory processing, and spatial relations.
- **Mirror Therapy:** Therapist can work with client doing activities while blocking vision to affected upper extremity and allow viewing (through mirror) of the unaffected upper extremity by placing a mirror on the board while in vertical or angled position.
Performance Components: This activity allows the client to work on self acceptance, fine motor movements, motor planning, sensory awareness, and proprioception when they cannot see their own hand during the activity.
- **What’s That Item?:** Therapist places various items under the tabletop without the client watching. Client then has to feel the items and tell the therapist what they are without looking.
Performance Components: By feeling for various objects the client can work on delay of gratification, in-hand manipulation, attention, problem solving, and stereognosis.
- **Lace Tying:** Client can practice threading different types of laces through the holes and tying knots.
Performance Components: By practicing tying knots the client works on meaning, joint mobility, initiation of activity, calculation, and depth perception.
- **Timed Pin Test:** Client can pick up shelf pins from a bowl and place as quickly as possible into corresponding holes on the underside of the tabletop. (Similar to O’Connor Manual Dexterity Test)
Performance Components: This activity can address impulse control, balance, time management, touch, and vision when the client is picking up pins and it is timed.

Thanks

I would like to give a special thanks to my wife for helping me come up with fun activities to use with the PF-MAC. I would also like to thank Jeff for letting me use his table-saw and for his help in assembling the PF-MAC.