All you need to know about

Fine Motor Development

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Fine motor development

Motor skills can be divided into two broad categories: fine motor skills and gross motor skills. Gross motor skills involve movements and control of large, force-producing muscles in the trunk, arms and legs (Tepeli, 2013). Gross motor activities include actions such as crawling, running, walking, swimming, and other activities involving large muscles. Fine motor activities refer to the movement and control of smaller muscles in the hands, wrists, fingers, feet, toes, lips and tongue. This includes smaller actions such as picking up objects between the thumb and finger, using a pencil to write, holding a fork and using it to eat and other tasks that occur on a daily basis. In a school setting, fine motor development is important for the development of a tripod pencil grip, learning to cut with scissors, constructing with blocks, building puzzles and developing a legible handwriting. It also plays a role in activities like:

- sorting and organiszing blocks or beads
- stringing beads
- picking up and putting down objects
- paging through a book
- playing musical instruments

Fine motor skills also involve visual motor skills, such as hand-eye-coordination and visual-motor integration. Eye-motor – coordination is the ability to coordinate movements of the body with vison (Tepeli, 2013), e.g. catching a ball requires coordination of what the eyes see and what the hands are doing. Eye-motor coordination is a predictor for gross motor development.

The first visual motor integration skills mastered by infants are gazing (saccades, head movements and pursuit) and tracking (smooth pursuit) (Braddick & Atkinson, 2011). Visual controlled grasping and reaching develops next (Braddick & Atkinson, 2011). Depth perception is especially important during this phase of development (Braddick & Atkinson, 2011). The visual -locomotion control system develops when a baby starts crawling and walking.

1. Milestones for fine motor skills

Three to four-year-olds should be able to:

- build a tower with nine small blocks
- copy a circle
- imitate a cross
- manipulate clay
- use their non-dominant hand to assist and stabilize objects
- cut paper with scissors

Failure to achieve these milestones may lead to:

- delayed pre-writing development
- frustration with or avoidance of pencil-based tasks
- poor pencil grasp and pencil control
- poor self-care skills like dressing and eating
- delayed drawing skills

Four-to five -year-olds should be able to:

- cut on a straight line
- copy a cross
- copy a square
- write their name
- copy numbers
- copy letters
- have a well-established dominant hand
- dress and undress independently

Failure to reach these milestones may lead to:

- difficulty holding and manipulating a pencil
- difficulty learning to write name and letters
- dependance on caregivers for everyday tasks such as dressing and eating
- frustration with or avoidance of pencil-based activities

Five- to six-year-olds should be able to:

- cut out simple shapes
- copy a triangle
- colour within the lines
- use a 3-finger pencil grip
- paste and glue appropriately
- draw basic pictures

Failure to reach these milestones might lead to:

- difficulties learning to form letters and numbers correctly
- poor handwriting
- difficulty demonstrating academic ability on paper
- fatigue during pencil-based tasks
- frustration with or avoidance of pencil-based tasks

The milestones for six- to seven-year-year-olds includes:

- form most letters and numbers correctly
- write consistently in lines
- demonstrate controlled pencil movement
- good endurance for writing
- can build with blocks (e.g. LEGO) independently
- ties shoelaces independently

Failure to develop these skills might lead to:

- difficulties getting ideas down on paper
- experiencinges fatigue during handwriting tasks
- difficulty keeping up in class due to slow handwriting
- poor legibility of handwriting
- may impacting on self-esteem when comparing work to peers
- possible frustration and/or behavioural difficulties due to avoidance of pencil-based tasks

2. Visual-motor integration

2.1 Beads in a paint palette

Use the paint palette as a sorting tray for small beads. The learner grasps bead with his/her forefinger and thumb. Since the cups on the paint palette is small, the learner must be very precise about where to place each bead. This activity integrates fine motor skills with sorting skills as well as figure-ground perception.

If the learner struggles, muffin pan or egg carton can be used as well as bigger beads. To make the activity more difficult a tweezer or tongs can be used to grasp the beads.

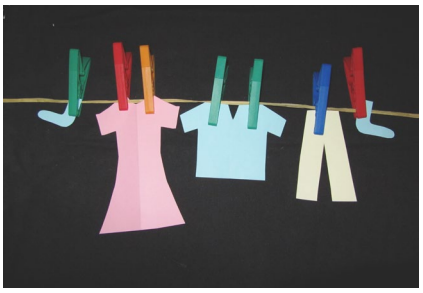
2.2 Pom-poms and tweezers

The learner uses tweezers to grasp a pom-pom and place it in a ice cube tray. The learner uses finger muscles to squeeze the tweezers. The pom-poms can be sorted according to colour. The pom-poms can be purchased at CAN, PNA, Pick & Pay and craft shops.

To make the activity a bit easier, tongs can be used instead of tweezers.

2.3 Hanging the washing

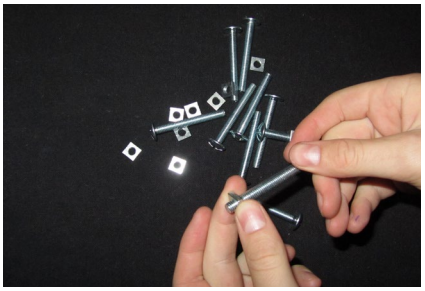
The learner cuts out paper clothes. The learner then uses pags to hang the paper clothes on a washing line strung in the classroom. Doll's clothes or clothes cut from felt can also be used.



2.4 Pegs on a box

The learner squeezes a peg and clips it onto the sides of a box or plastic container. The learner can be asked to follow a specific [pattern, e.g. first a blue peg, then a red peg , two yellow pegs, then start the pattern all over.

2.5 Nuts and bolts

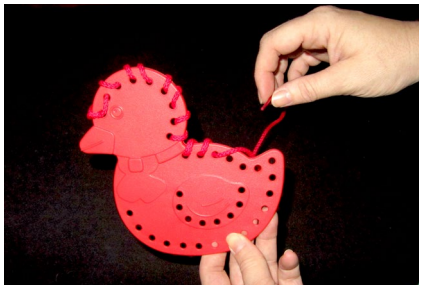


The learner uses his /her wrists and fingers to grasp and screw nuts onto bolts. A high level of coordination is needed since both eyes and hands have to work together.

2.6 Spooning flat marbles

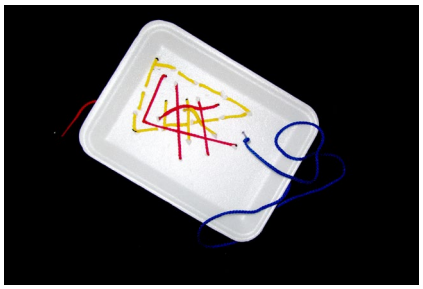
The learner scoops up flat marbles with a spoon and places them in another bowl or container. The learner may be asked to spoon up a specific number at a time. Instead of flat marbles, stones, round marbles, buttons or beads can be used.

2.7 Lacing cards



Lacing cards can be purchased or made from cardboard using a hole puncher. The learner uses a shoelace or string to “sew” all the way around the card.

2.8 Sewing plates

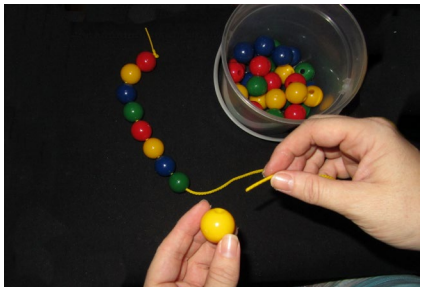


Using a plastic needle and yarn, the learner sews a pattern on a styrofoam plate by pushing the needle through the plate. Wool, shoelaces or ribbon can also be used instead of yarn. Learners may be requested to sew a specific pettern e.g. zig-zag.

2.9 Stringing straws

Cut straws into 2cm pieces or spray paint macaroni pieces. The learner used a plastic needle and yarb or shoelaces to lace the straws or macaroni into a necklace. If a variety of colors are used, this could be combined with doing patterns in mathematics.

2.10 Stringing beads



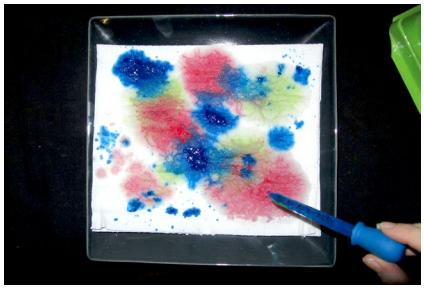
The learner strings beads onto laces or pipe cleaners. This activity can be integrated in numeracy by specifying the sequence of the beads to be stringed.

To make this activity more difficult the specific pattern to be stringed can be given orally (auditory memory) or visually (visual memory). The size of the beads can also be increased to make the activity easier or decreased to make the activity more difficult.

2.11 Bean gluing

The learner draws a simple picture on paper and then traces the outlines with glue (wood glue works best). The learner then places beans or lentils onto the glued line.

2.12 Eyedropper art



The learner drops liquid watercolour paint onto a paper towel. Remember to place the paper towel in a plate or on a plastic surface.

2.13 Sand art

The learner draws a picture on a piece of paper. The learner trace the lines with glue (wood glue works best). Then the learner pinch some sand between his/her thumb and forefinger and springle the sand onto the glue.

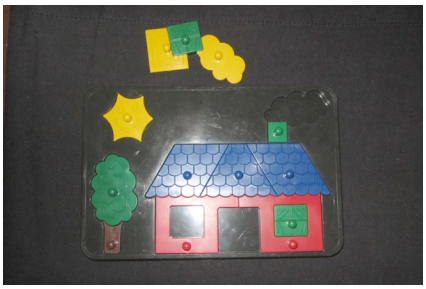
2.14 Insect wrapping

The teacher explains that some spiders catch insects and then wrap them up in their webs. The learner uses string ("spider web") to wrap up plastic insects.

2.15 Birds eating worms

Cut pipe cleaners in short pieces or "worms". The learner uses tweezers ("bird's beak") to catch the "worms". Learners can see how many worms they can catch in 1 minute or how many x-colour worms they can find.

2.16 Knobbed puzzles



The learner fits the pieces of the puzzle into the correct spaces.

2.17 LEGO or building blocks

These are essential to have in any grade R or 1 class. Younger learners may use Duplo blocks as well as wooden blocks. For older learners wooden blocks can be supplemented with LEGO.

2.18 Play dough

The learner rolls balls and snakes using play dough. Clay can also be used.

2.19 Shooting boats

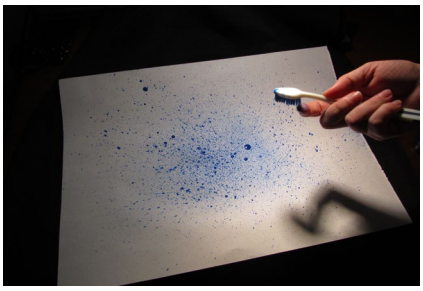
Draw several boats on a large piece of paper. The learner pretends a pencil is a canon. The learner takes the front of the pencil with a tripod grip. The back of the pencil is facing the paper and the lead face the learner. To load the canon the learner must walk his fingers to the back of the pencil (without using his other hand) flip the pencil over so the lead is facing the paper and then walk his fingers to the front. To shoot down a boat he/she crosses out the boat. To reload, repeat the fingers walking and flipping the pencil over.

2.20 Water play

The learner transfers water from one cup to another using a eye dropper or syringe (without a needle!). Plastic syringes of different sizes can be bought at most pharmacies. Allow learners to experiment and find the syringe that fills the cup the fastest.

In summertime, allow learners to play in a bucket or basin of water. Squeeze bottles are a lot of fun! Containers of different sizes, pypes or tubing and funnels can be used to transfer water from one container to another. Even washing their own cups and plates in soap water can be turned into a fun activity.

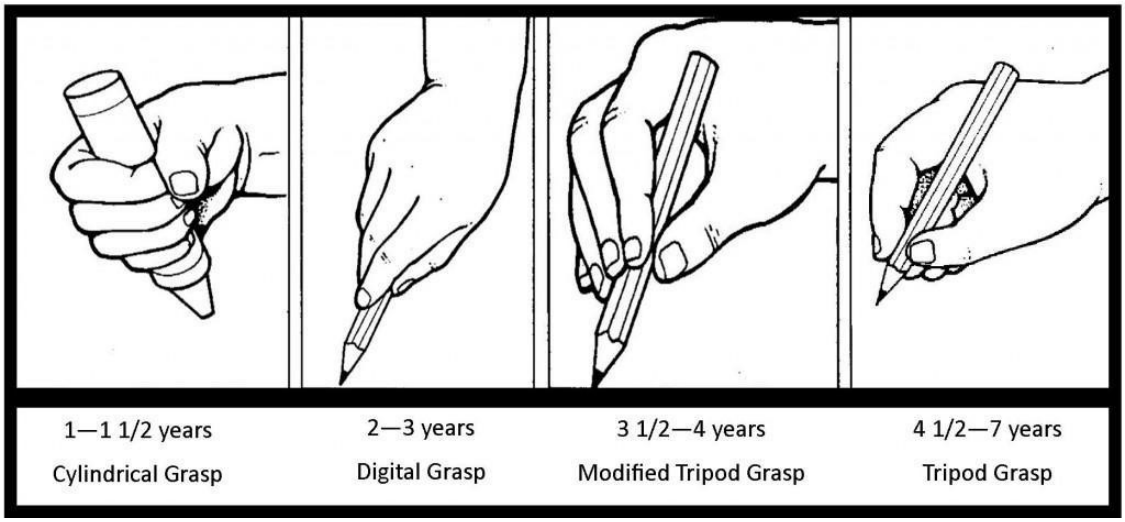
2.21 Splatter painting



Using an old toothbrush dipped in liquid watercolour paint, the learner splatters paint onto a piece of paper.

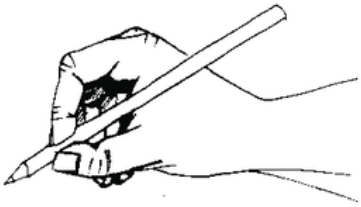
3.3 Pencil grip

A dynamic tripod grip is ideal. However, learners' pencil grip progress through stages as they get older.

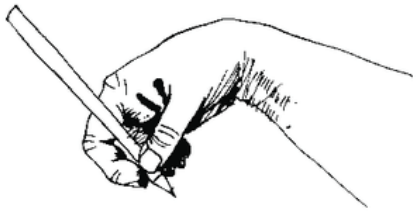


There are several different typical ways learners may grip their penscils:

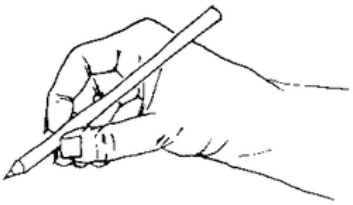
The angle of the wrist (descriptor 1):



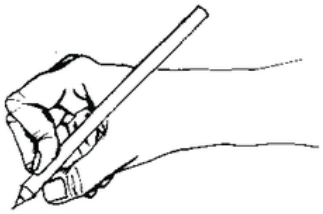
extended wrist



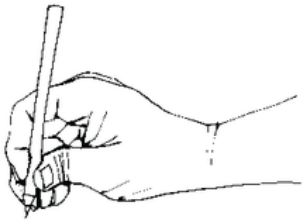
hooked wrist



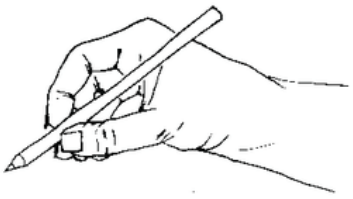
joints of index finger and thumb in a flexed position



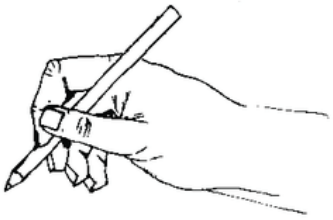
index finger joint in hyperextended position



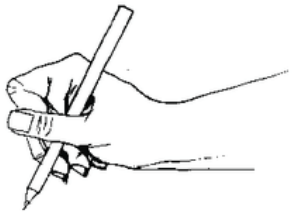
thumb joint in hyperextended position



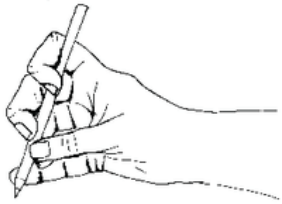
the dynamic tripod



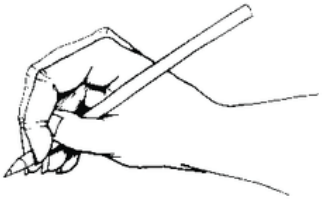
the lateral tripod



the cross thumb



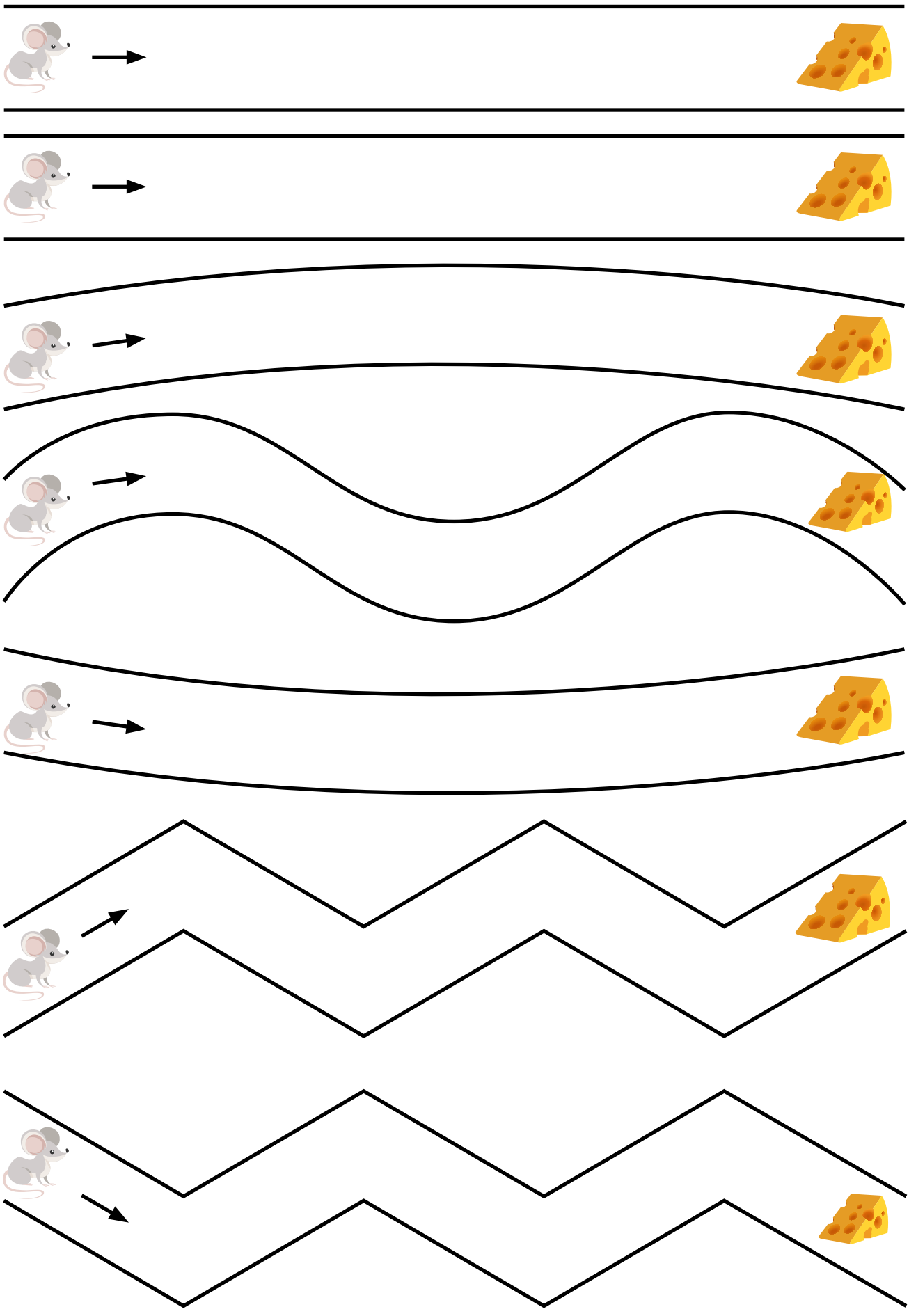
the high index



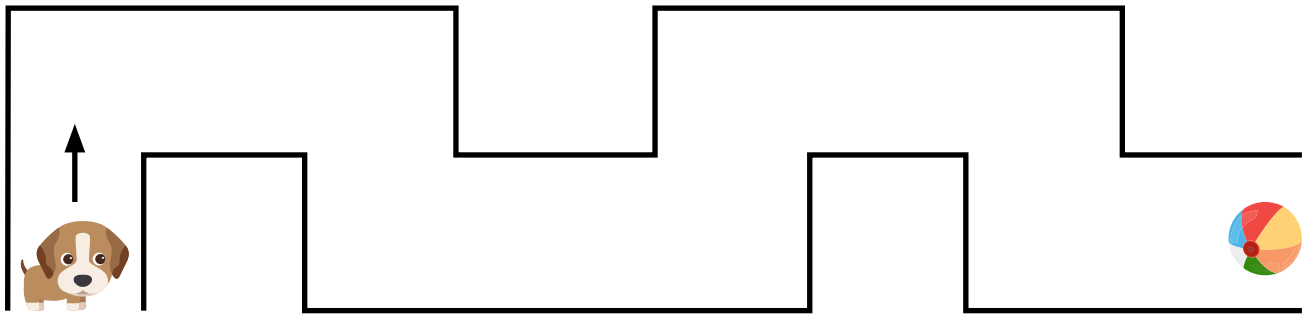
the thumb tuck

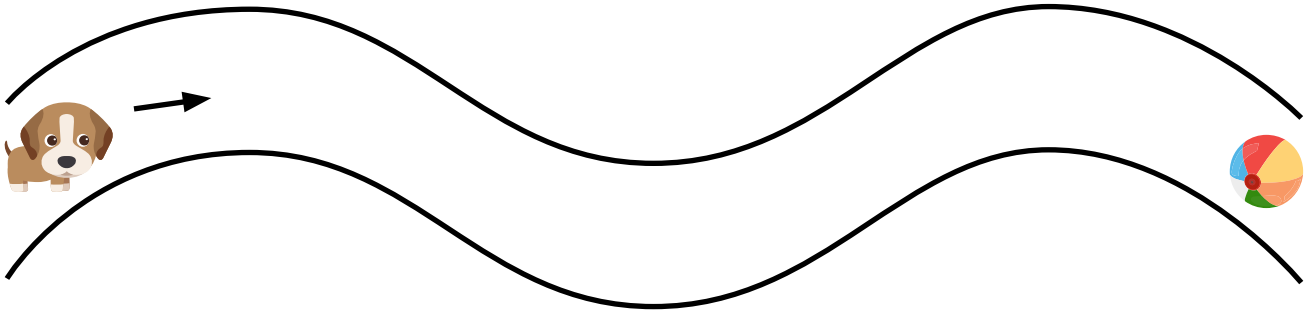
Fine motor coordination worksheets

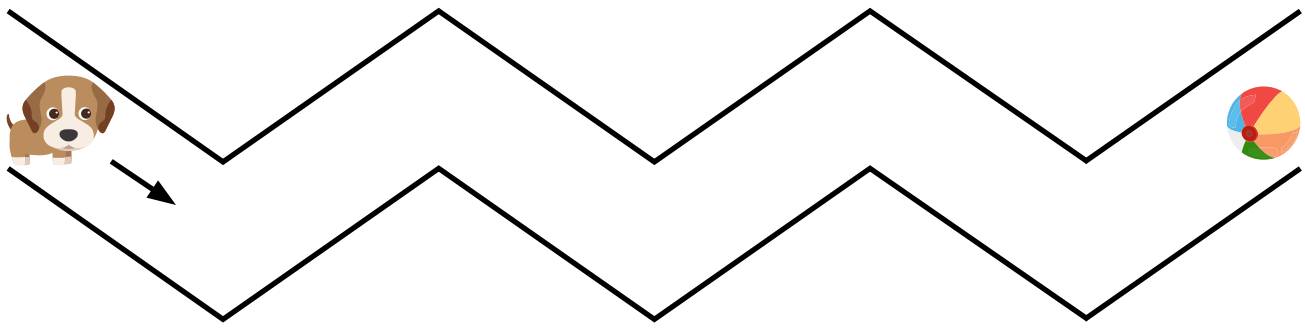
Draw a line from the mouse to the cheese. You are not allowed to touch the path or lift your pencil.



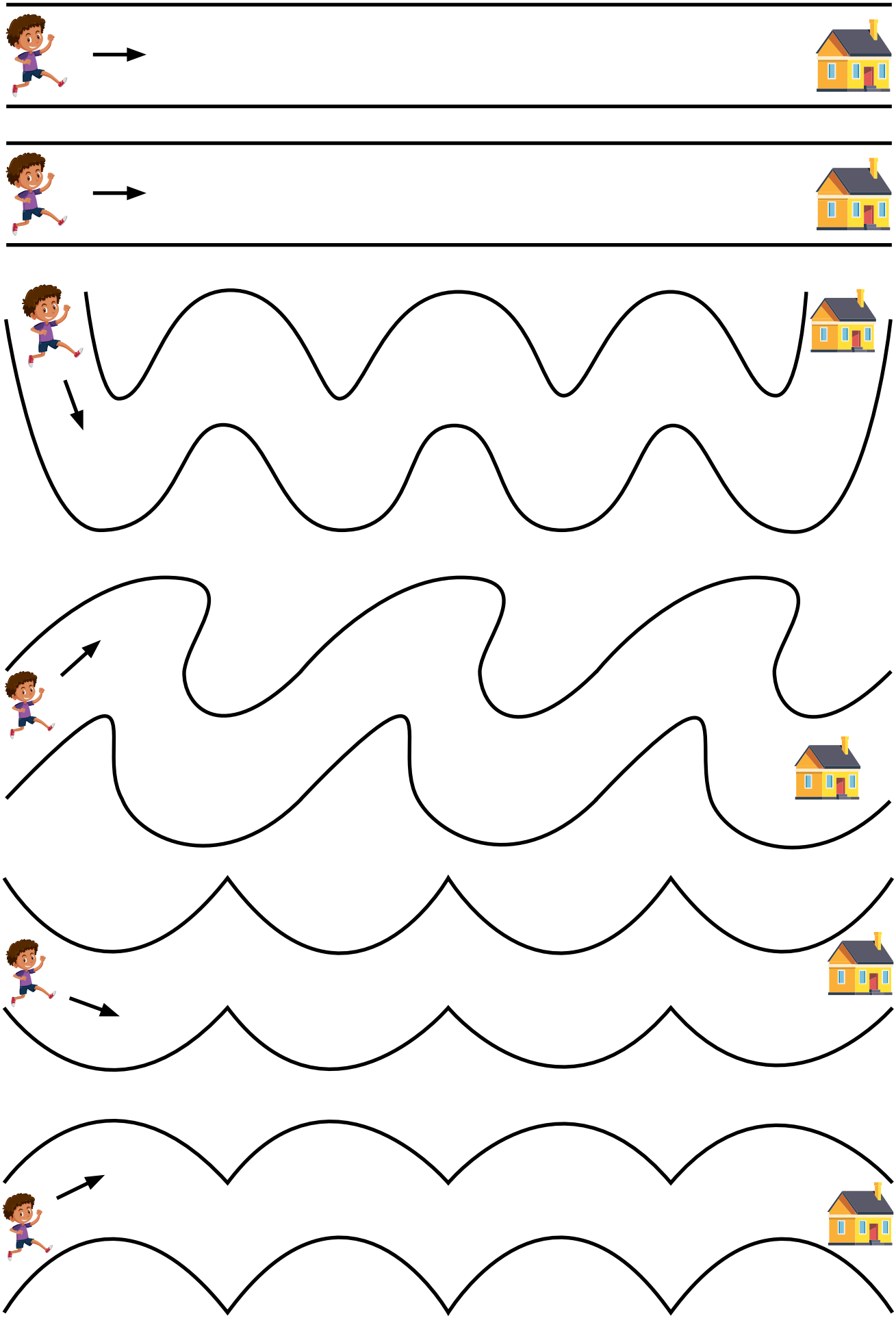
Draw a line from the dog to the ball. You are not allowed to touch the path or lioft your pencil.







Draw a line from the man to the house. You are bit not allowed to touch the path or lift your pencil.



Fine motor coordination worksheets

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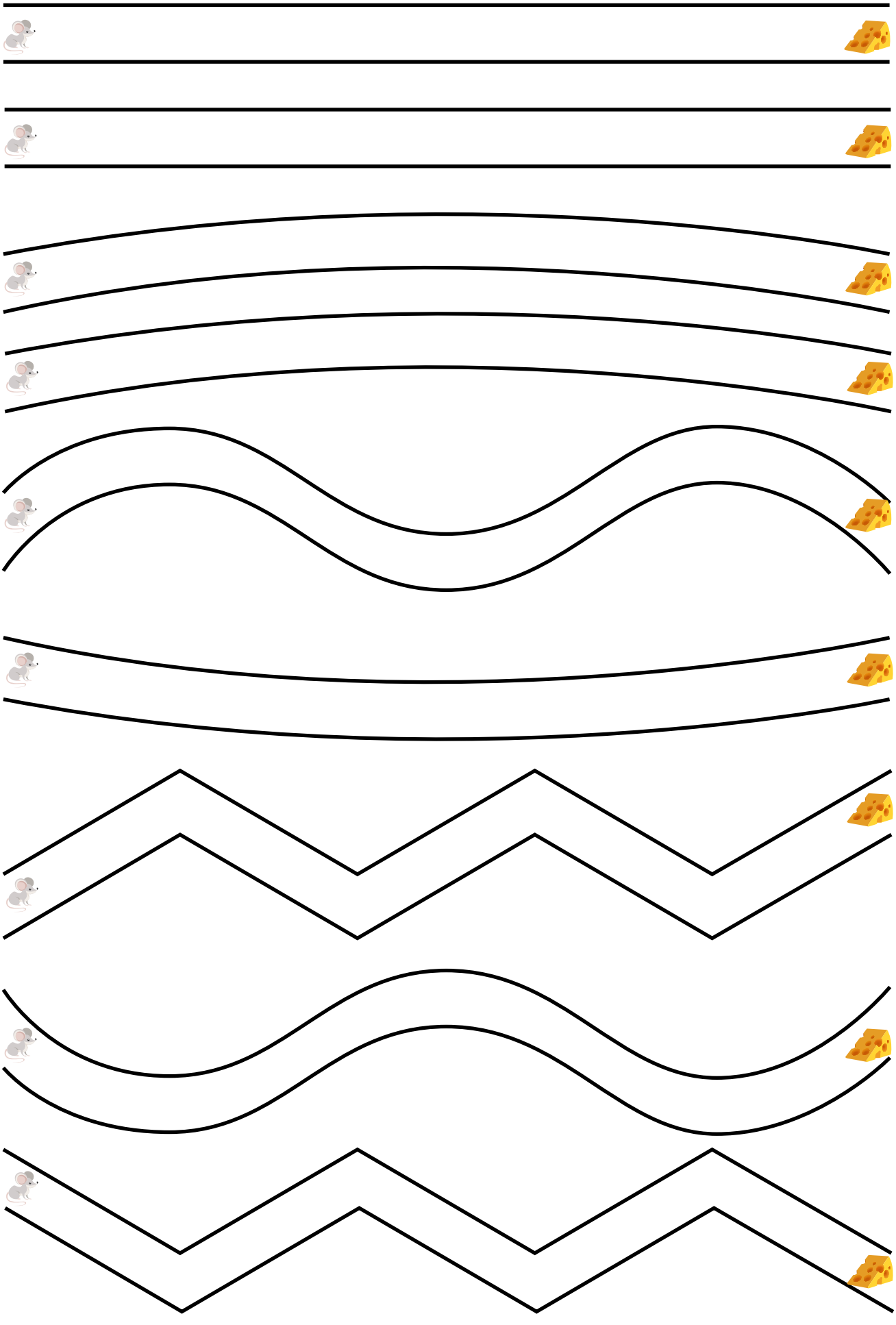

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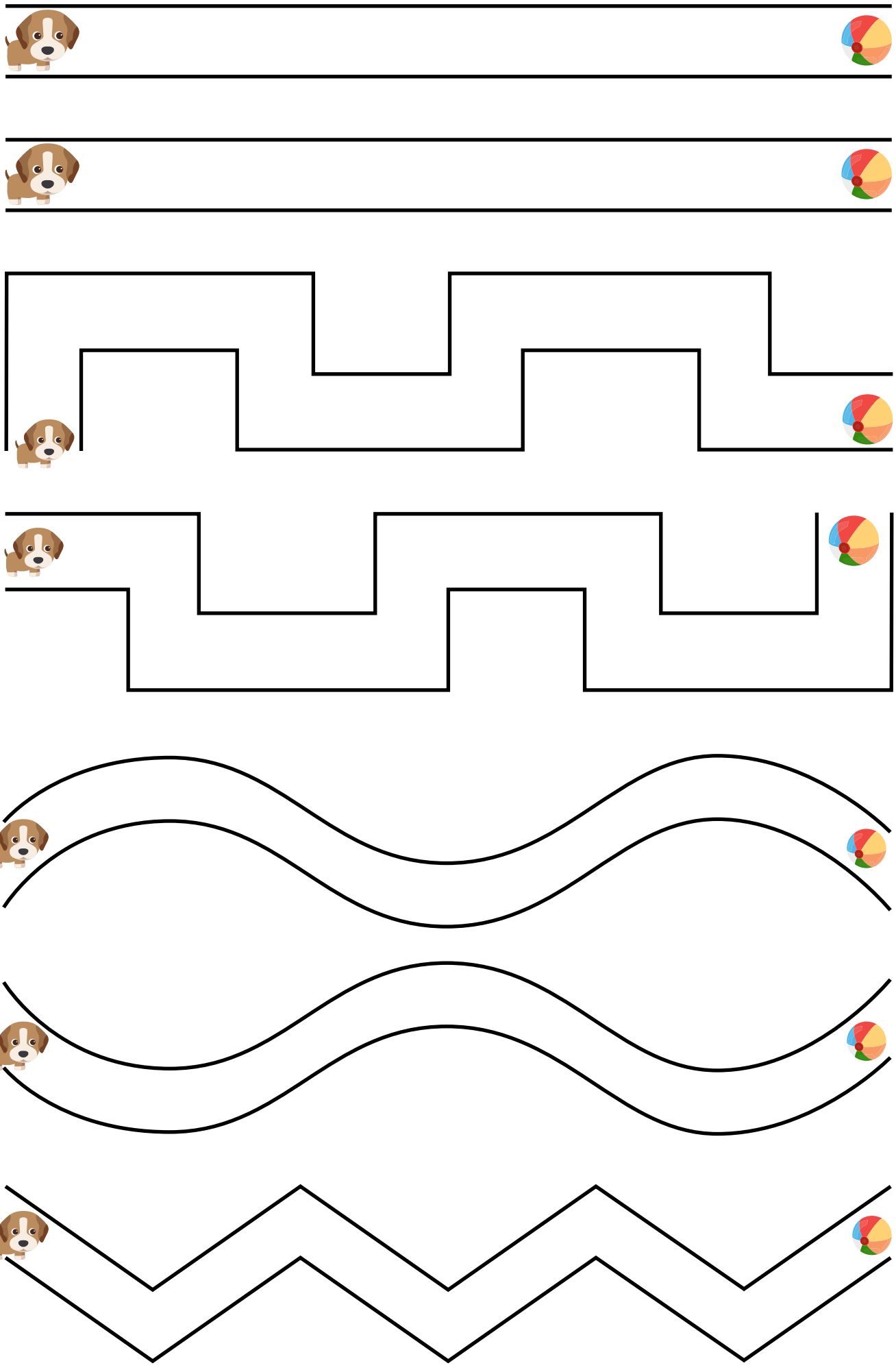

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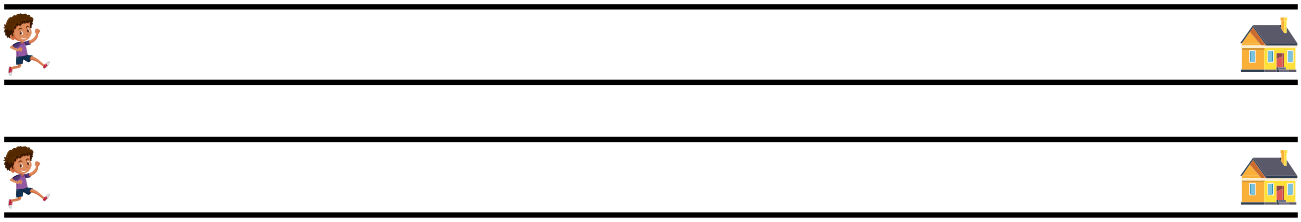
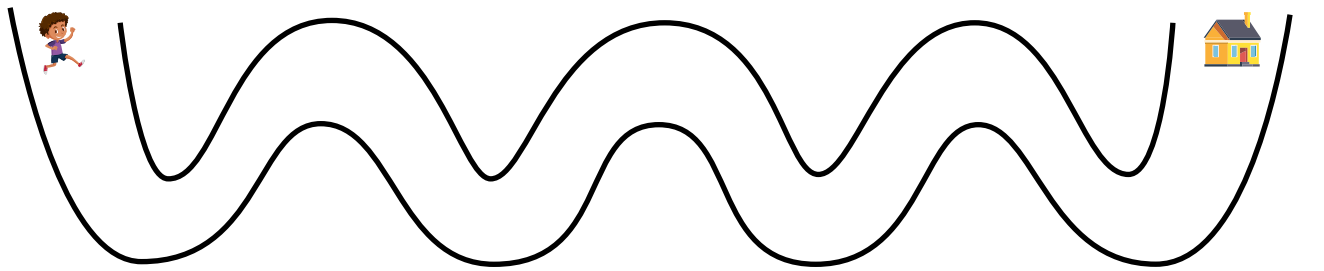
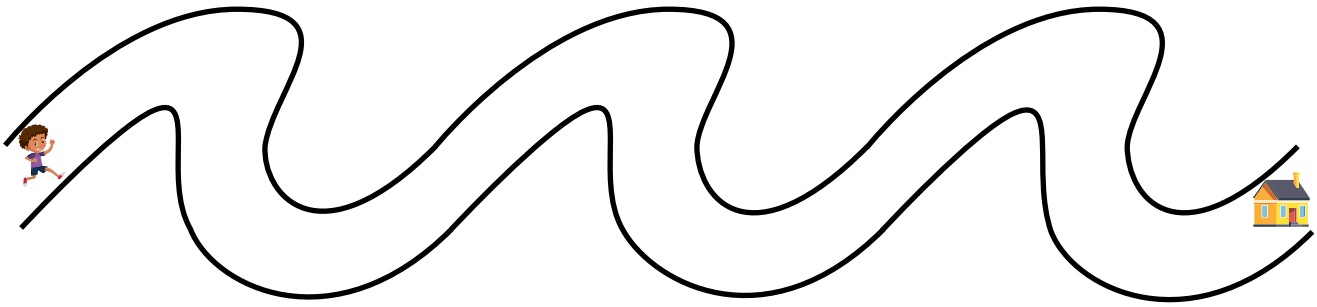
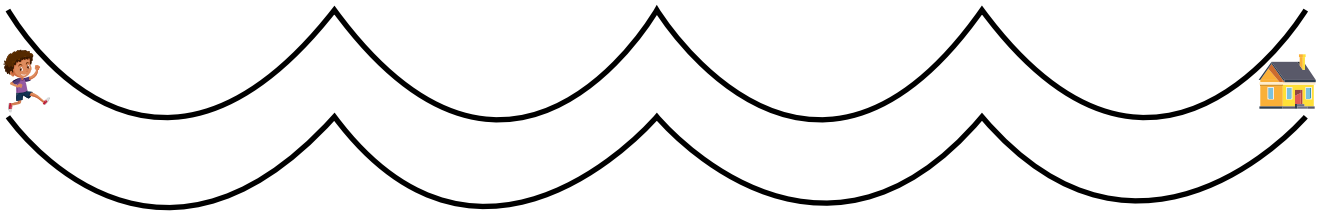
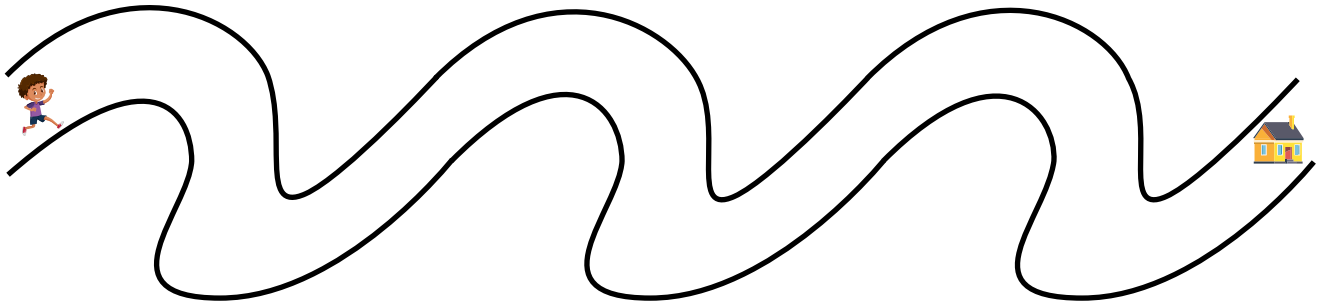
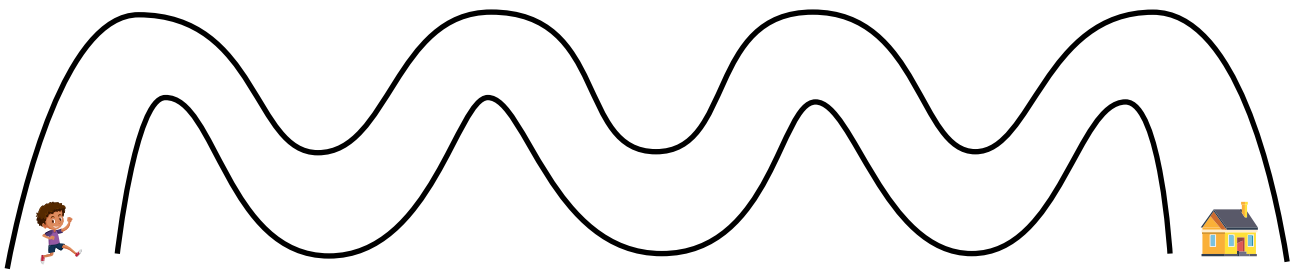


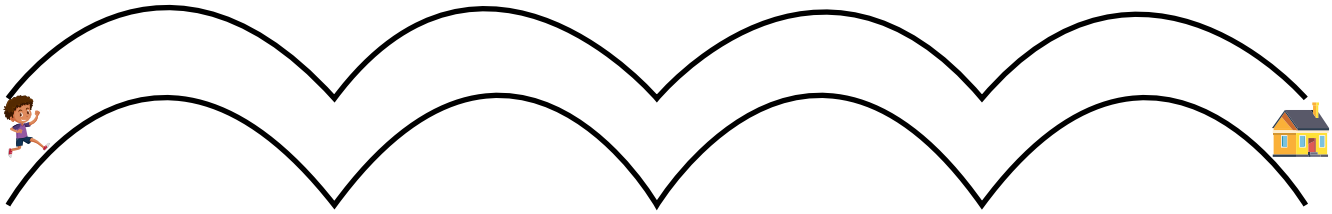




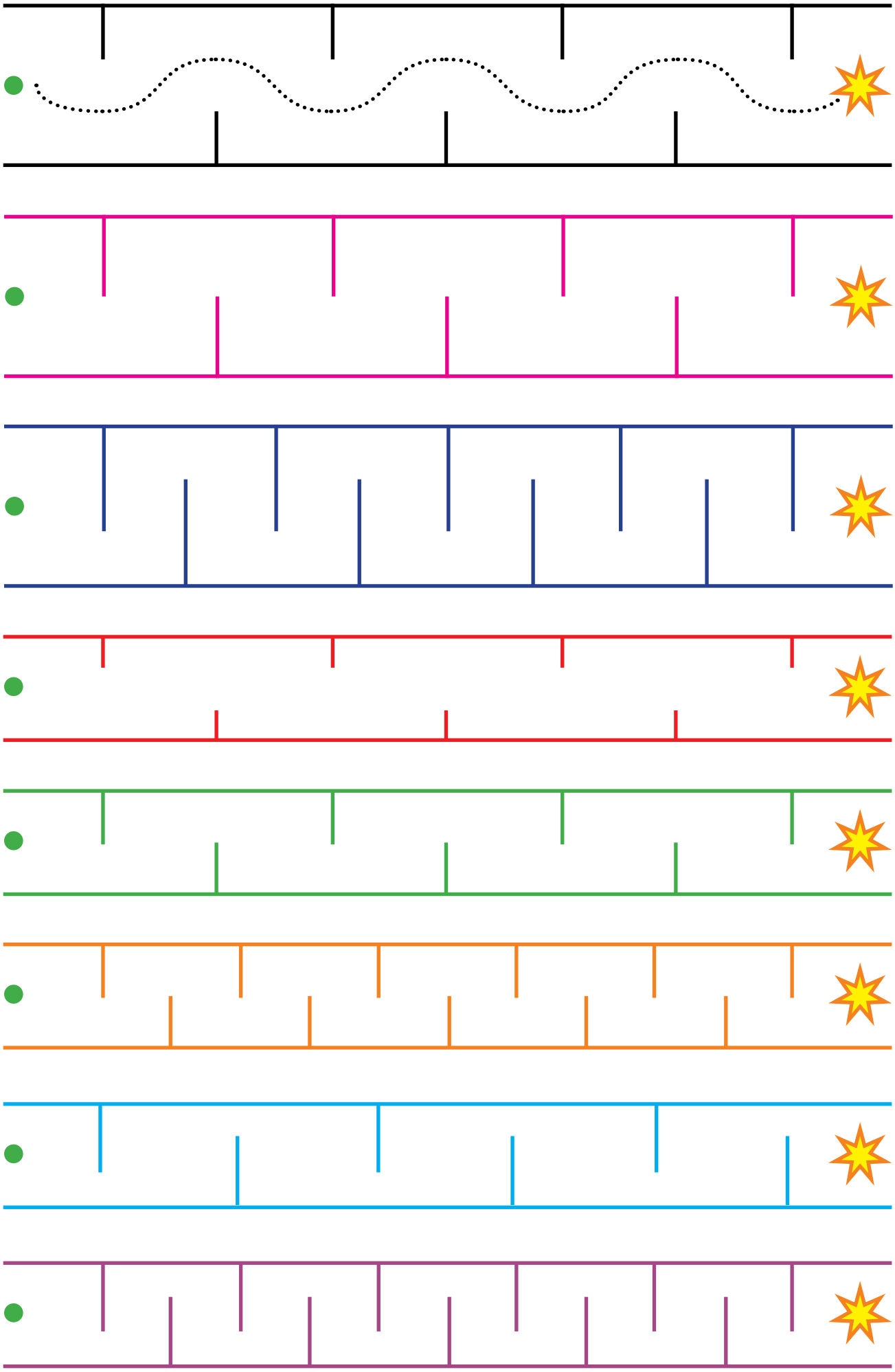




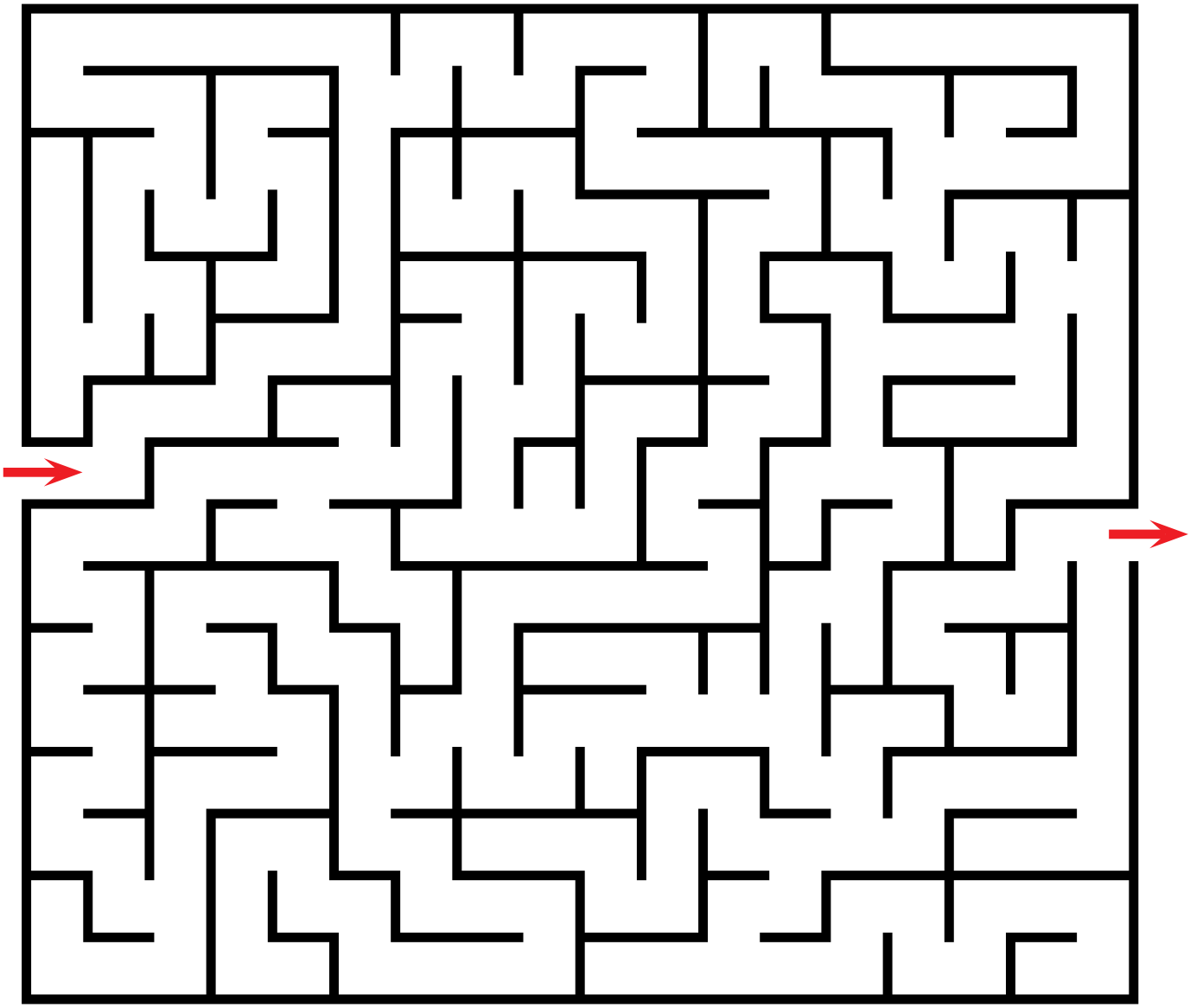


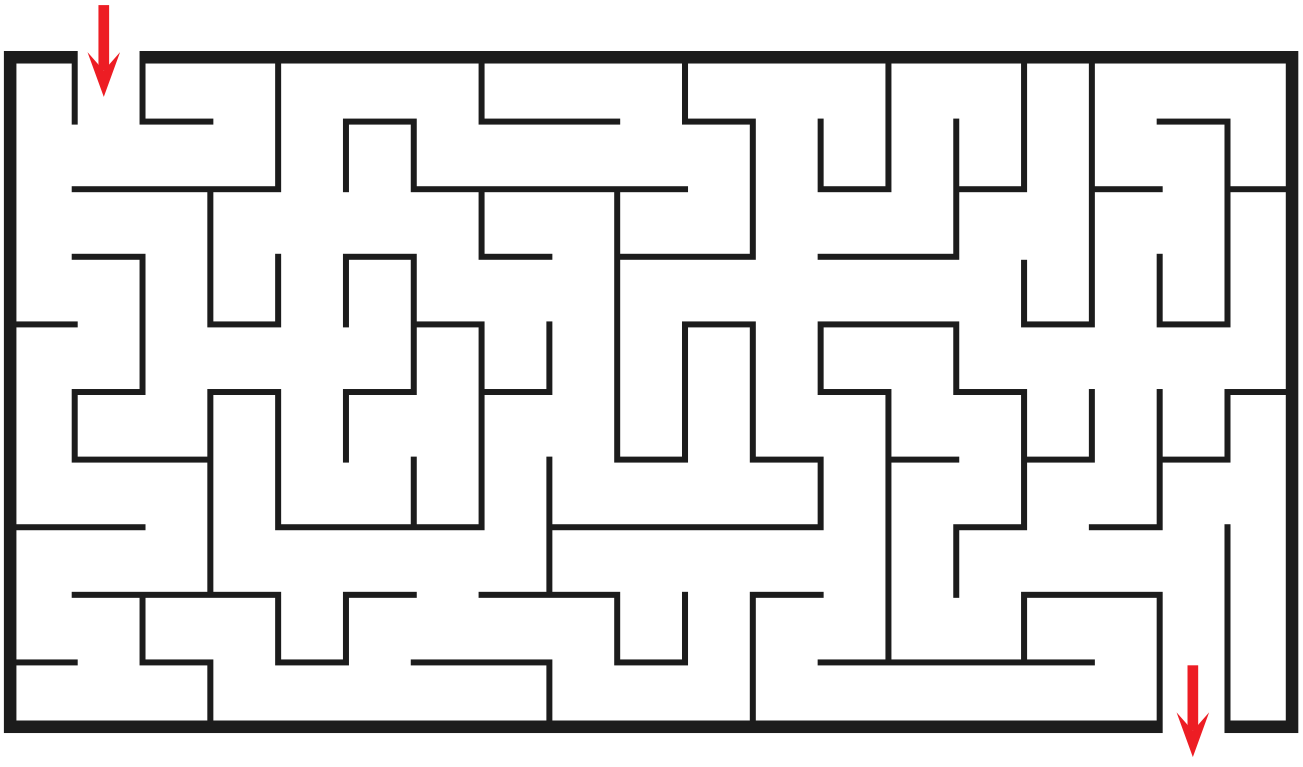


Draw a line from the dot to the star. You are not allowed to touch the path or lift your hand.



Draw a line from the beginning of the maze to the end.





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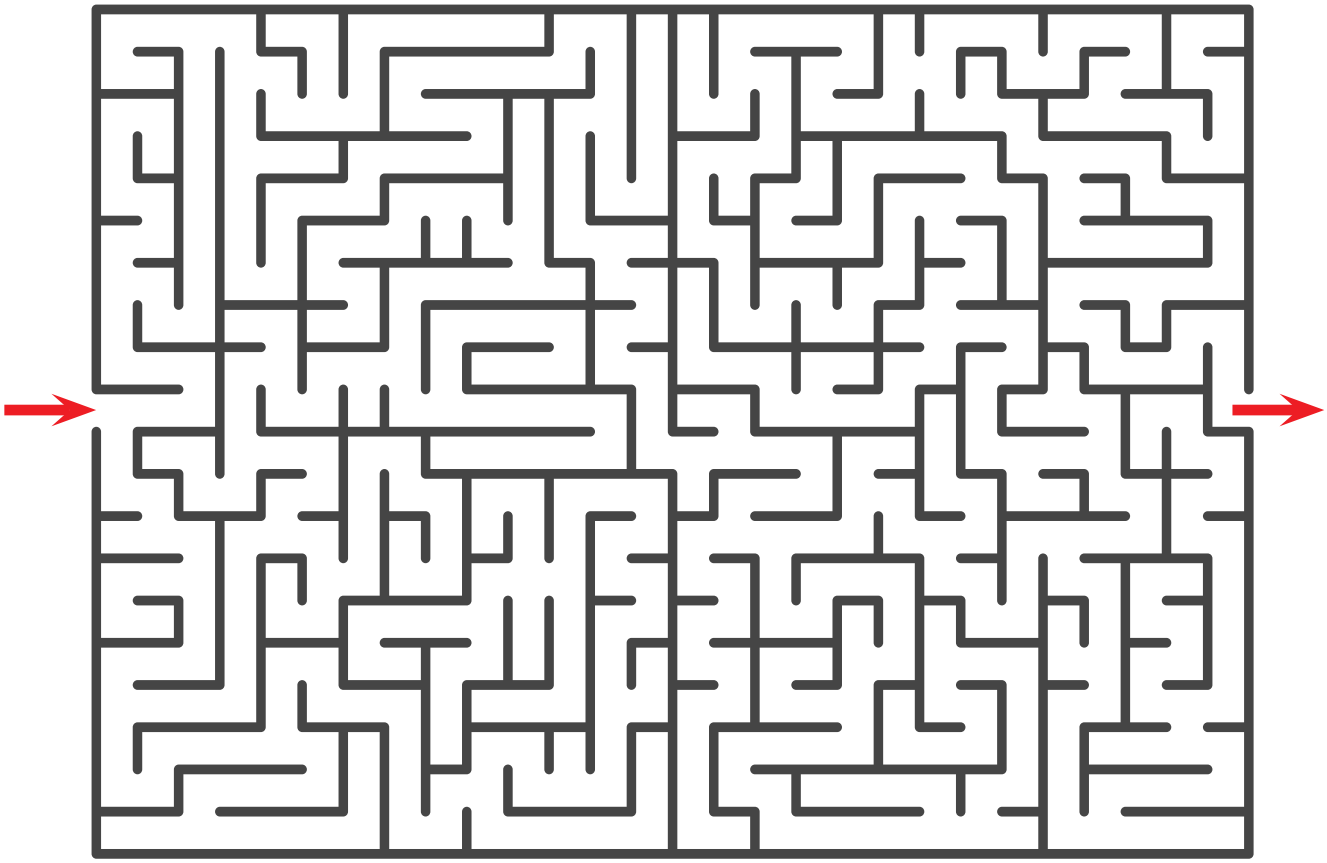
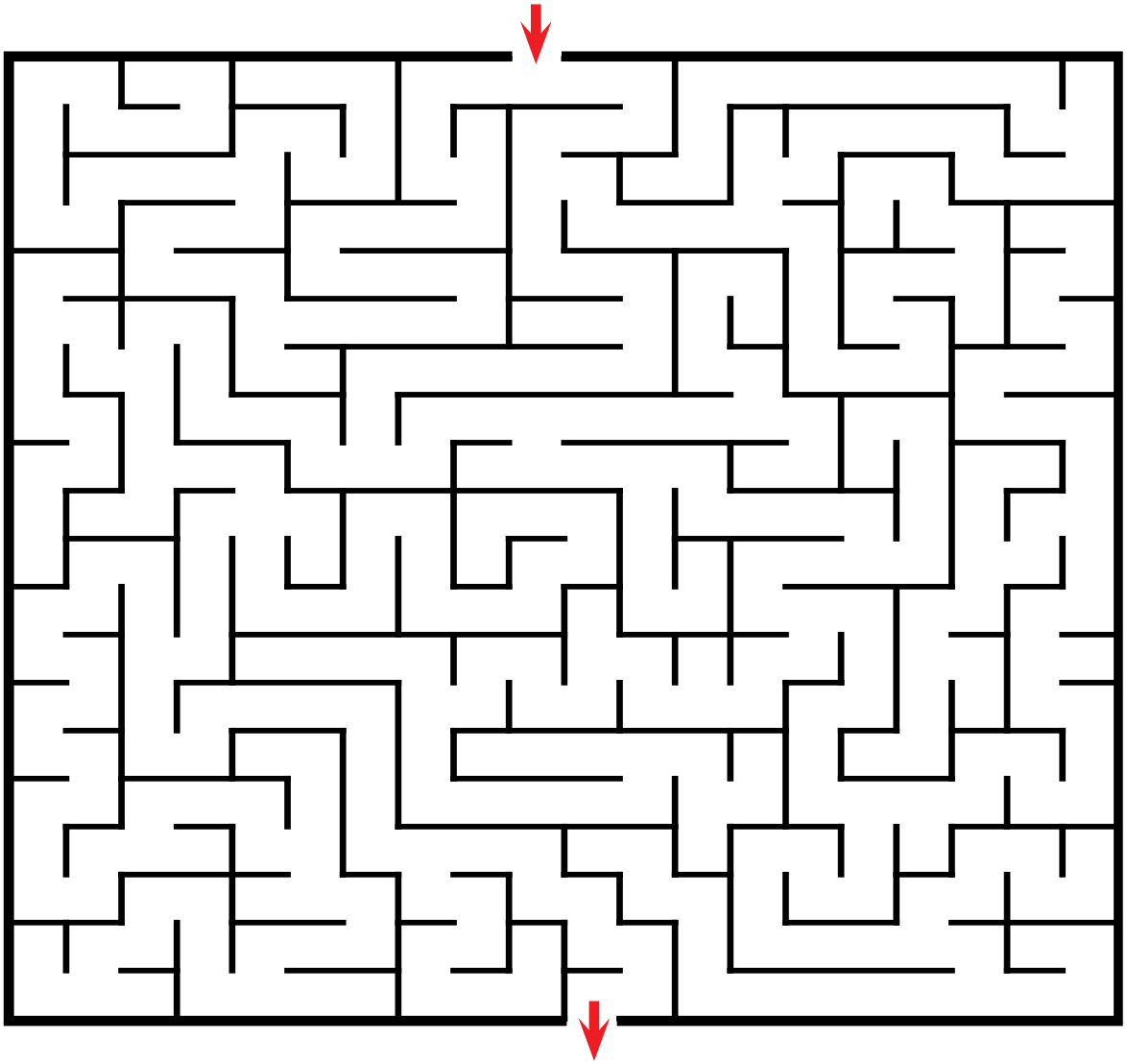
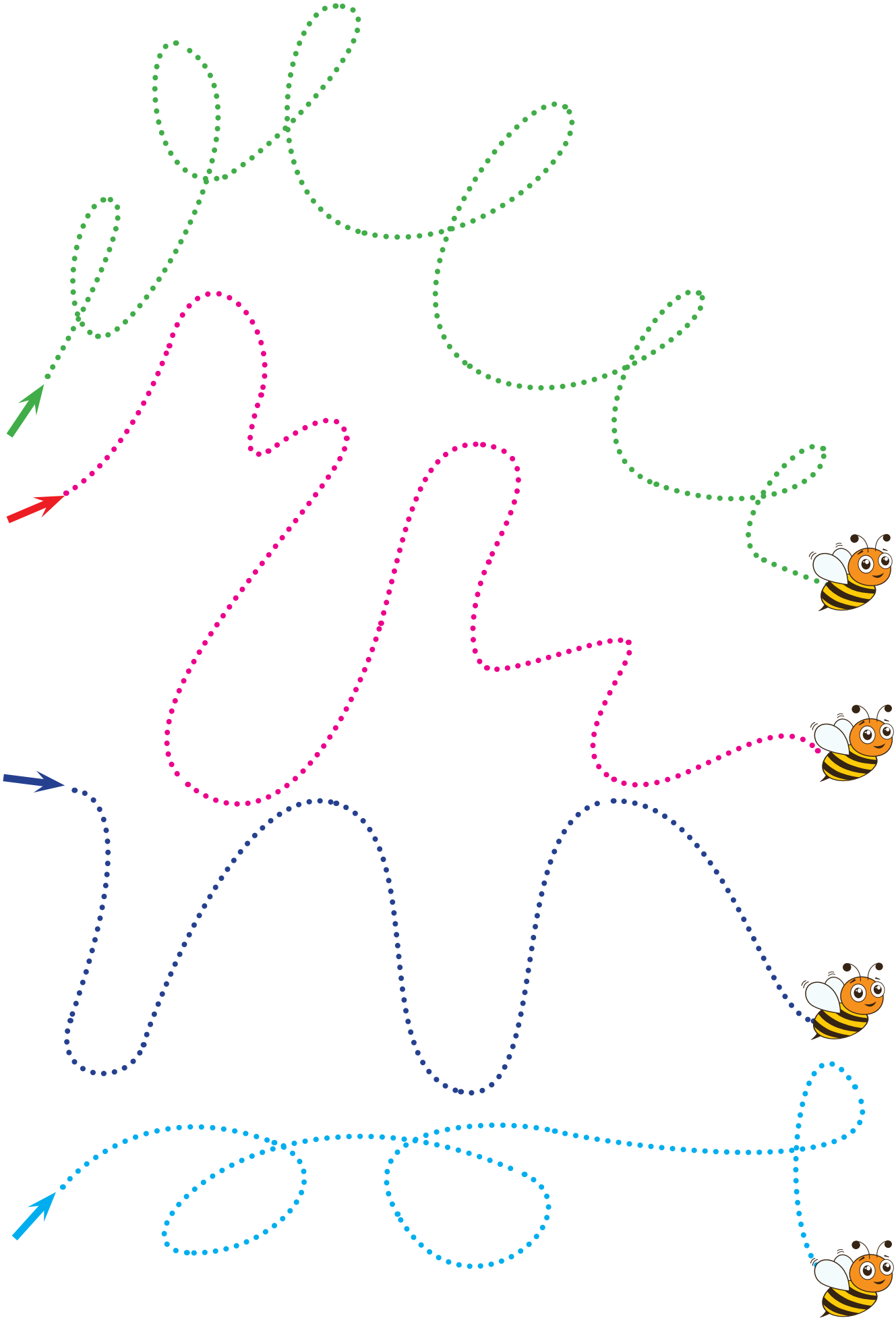




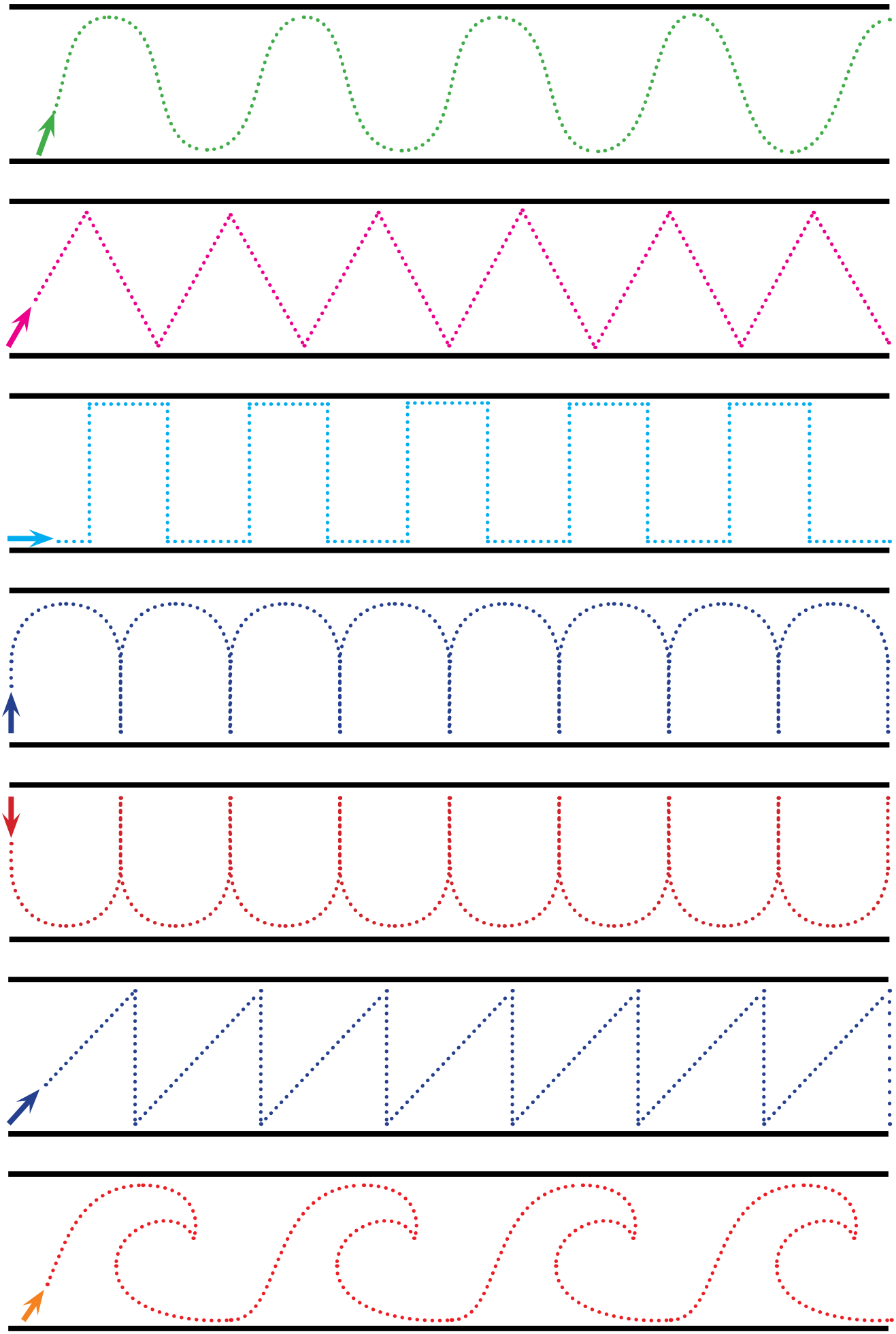
Pencil control worksheets

Trace on the line.



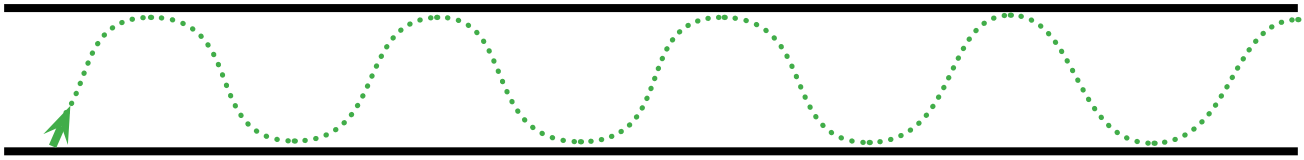
Writing patterns

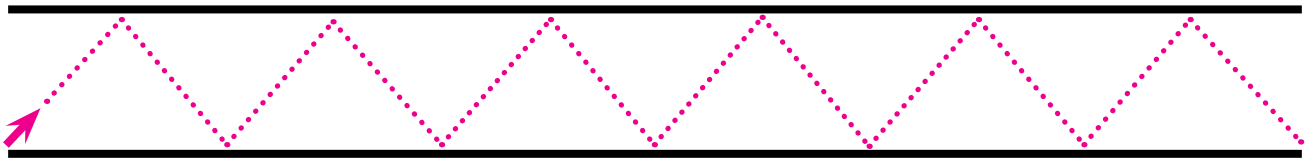
Trace the pattern. You are not allowed to lift your pencil.

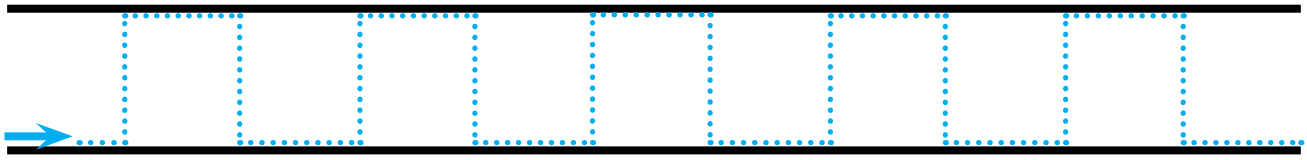


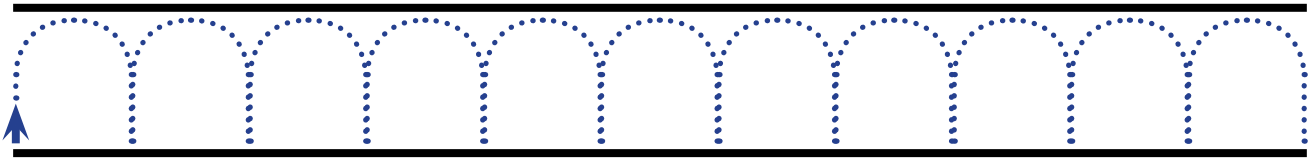
Writing patterns

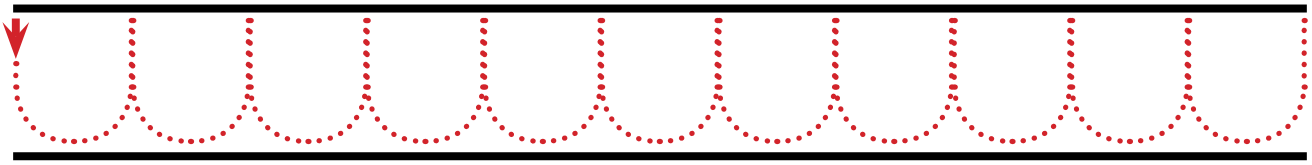
Trace the pattern. You are not allowed to lift your pencil.

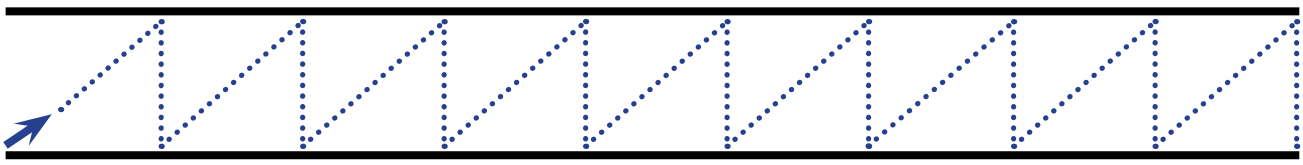


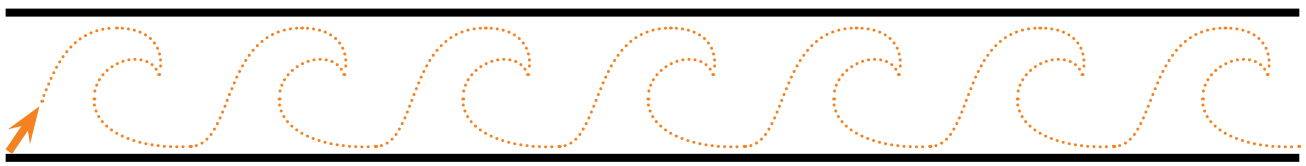




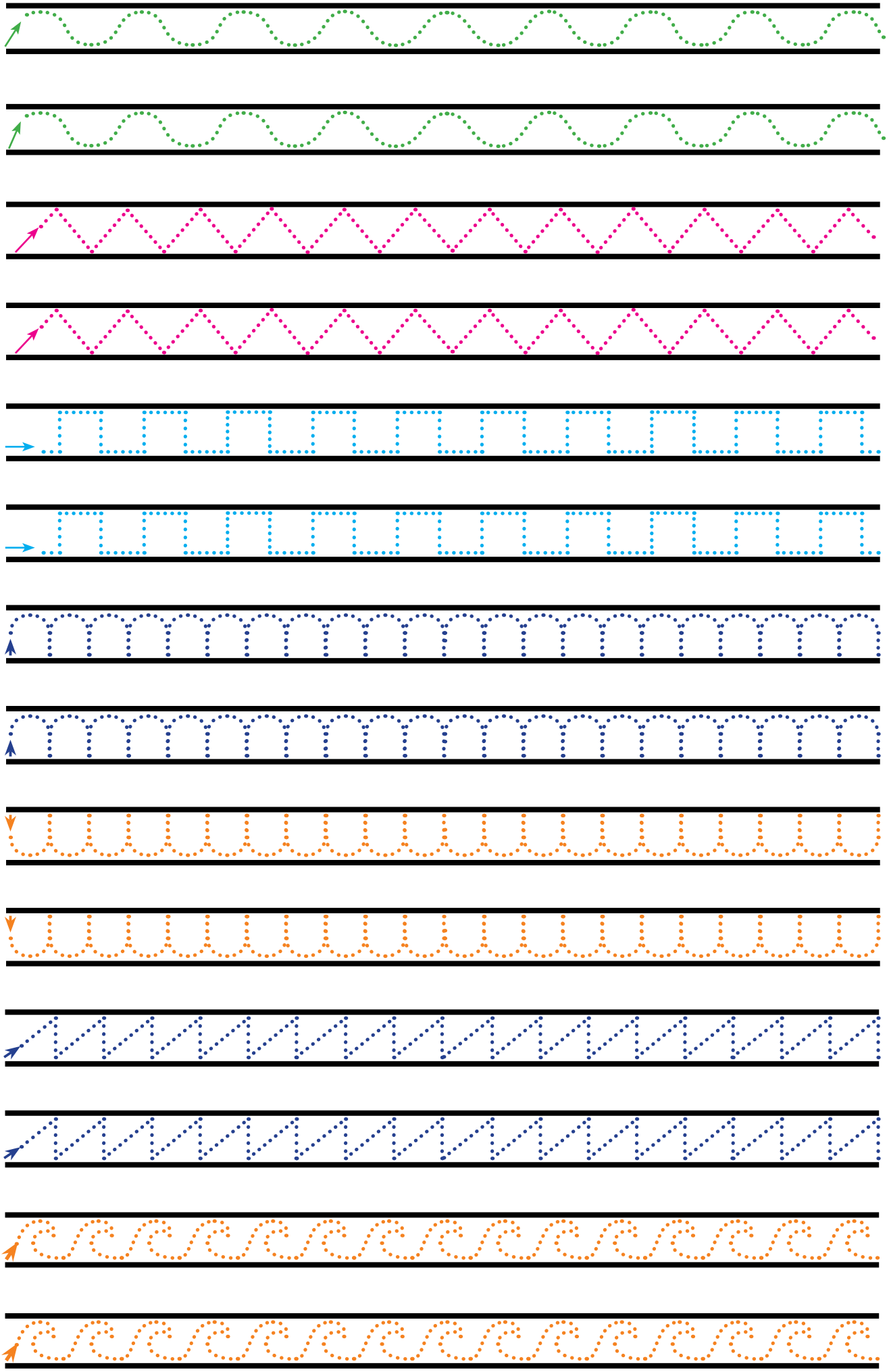






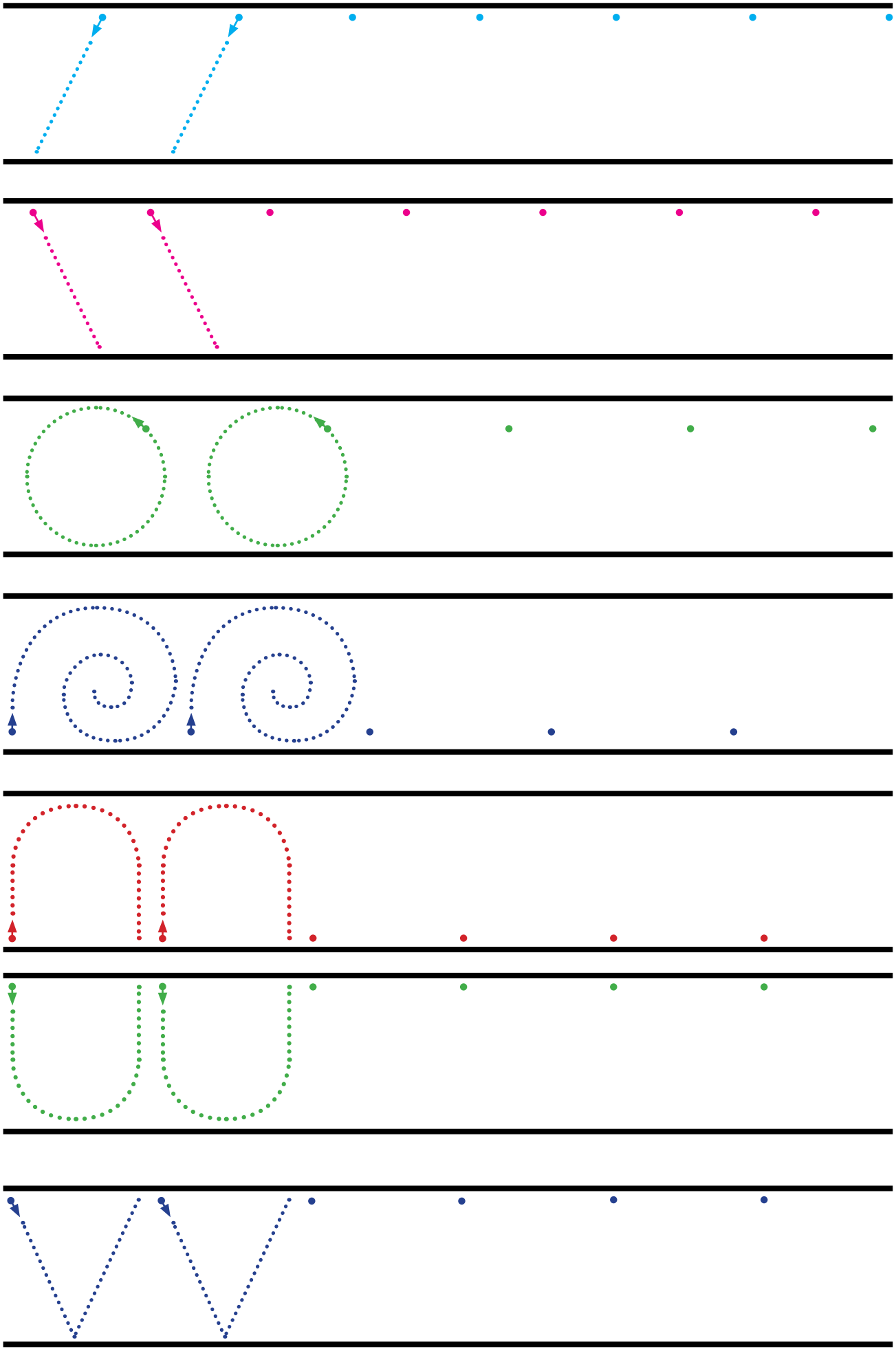


Trace the pattern. You are not allowed to lift your pencil.

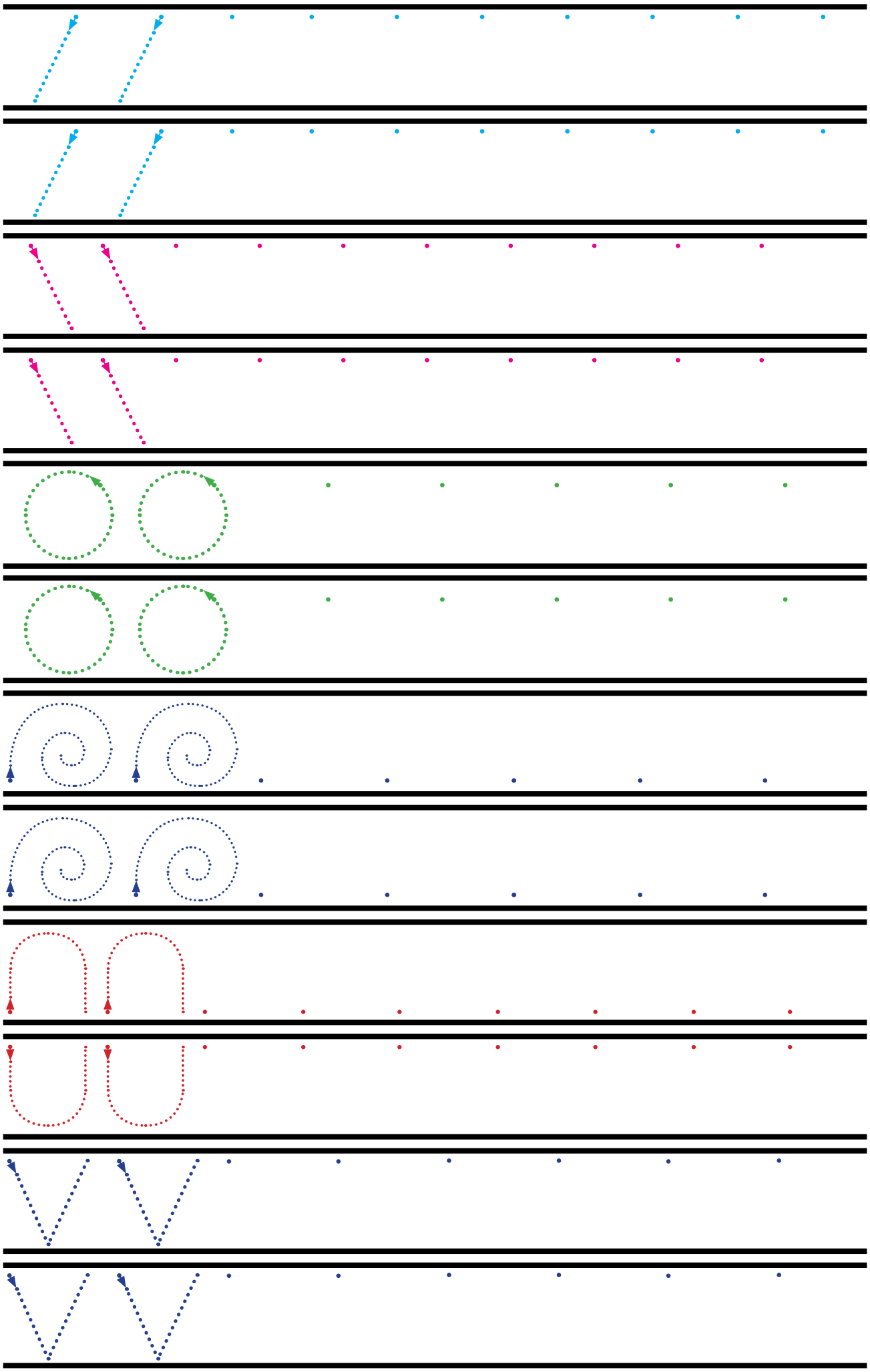


Handwriting patterns

Complete the patterns.



Complete the patterns.



Complete the patterns.