Working Memory Exercises

Created by David Newman
Speech-Language Pathologist
A Friendly Reminder

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Introduction

The efficient use of working memory skills is fundamental to a child’s capacity to learn new information within the classroom environment. The working memory exercises eBook contains several pages of challenging exercises which are specifically designed to force students to use their working memory skills to mentally arrange and organize information, before responding verbally.

The exercises are in three separate sections:

Digit Recall: These tasks progress from easy to difficult. Students are required to repeat numbers, both forward and backward. Repeating numbers backward places considerable strain on working memory resources.

Word Sequence – Attributes: Students are required to mentally arrange familiar animals and objects from, for instance, from smallest to largest. These activities prompt students to use their working memory abilities just long enough to place the objects into a logical order.

Temporal Sequence Exercises: Students are read a challenging sentence that requires them to mentally organize the information briefly before responding.
Working Memory Exercises

Digit Recall (2 digits)

Instructions: I’m going to read out some numbers. I want you to listen carefully and then repeat the same numbers back to me.

2 – 3
5 – 9
2 – 8
4 – 7
6 – 1

Instructions: I’m going to read out some more numbers. But this time it’s a bit different. I want you to listen carefully and then repeat the same numbers back to me, but backwards. So if I say 2 – 8, you say 8 – 2.

4 – 2   (2 – 4)
6 – 1   (1 – 6)
7 – 3   (3 – 7)
5 – 8   (8 – 5)
2 – 9   (9 – 2)
Digit Recall (3 digits)

Instructions: I’m going to read out some numbers. I want you to listen carefully and then repeat the same numbers back to me.

2 – 5 – 7
5 – 4 – 1
9 – 2 – 5
6 – 1 – 8
2 – 4 – 1

Instructions: I’m going to read out some more numbers. But this time it’s a bit different. I want you to listen carefully and then repeat the same numbers back to me, but backwards. So if I say 2 – 8 - 3, you say 3 - 8 – 2.

4 – 8 – 1 (1 – 8 – 4)
7 – 2 – 4 (4 – 2 – 7)
8 – 4 – 9 (9 – 4 – 8)
1 – 6 – 5 (5 – 6 – 1)
9 – 2 – 4 (4 – 2 – 9)
Digit Recall (4 digits)

**Instructions:** I’m going to read out some numbers. I want you to listen carefully and then repeat the same numbers back to me.

6 – 5 – 4 – 1

7 – 4 - 8 – 2

2 – 4 - 9 - 1

3 – 6 – 1 - 8

6 – 1 – 8 – 4

**Instructions:** I’m going to read out some more numbers. But this time it’s a bit different. I want you to listen carefully and then repeat the same numbers back to me, but backwards. So if I say 2 – 8 – 3 - 7, you say 7 - 3 - 8 – 2.

6 – 4 – 8 – 7  (7 – 8 – 4 - 6)

4 – 1 – 9 – 2  (2 – 9 – 1 – 4)

7 – 3 – 6 – 1   (1 – 6 – 3 – 7)

7 – 4 – 6 – 9   (9 – 6 – 4 – 7)

1 – 6 – 2 – 8   (8 – 2 – 6 – 1)
Word Sequence – physical attributes (animals)

**Instructions:** I’m going to read out a list of animals to you. I want you to listen carefully and then say them in order from **smallest** to **largest**. So for instance if I was to say *cat, ant, cow* you would say *ant, cat, cow*.

**Smallest to Largest**

**Category – Farm Animals**

a. horse       dog       mouse  
b. pig         cow       cat    
c. chicken     sheep     rat

**Category – Insects**

d. butterfly   flea       fly    
e. caterpillar ladybug  goliath beetle  
f. fly         grasshopper midge

**Category – Birds**

g. eagle       seagull    sparrow  
h. duck        condor     hummingbird 
i. starling     swan       albatross

**Category – African Animals**

j. lion        meerkat    elephant  
k. giraffe     hyena      leopard   
l. warthog     monkey     buffalo
Word Sequence – physical attributes (foods)

Instructions: I’m going to read out a list of foods to you. I want you to listen carefully and then say them in order from smallest to largest. So for instance if I was to say grape, watermelon, apple you would say grape, apple, watermelon.

Smallest to Largest

Category – Fruits

a. apple  grape  grapefruit
b. cherry  watermelon  orange
c. banana  plum  rockmelon

Category – Vegetables

d. pumpkin  pea  carrot
e. tomato  cabbage  bean
f. potato  eggplant  brussel sprout

Category – Nuts & Seeds

g. peanut  brazil nut  macadamia nut
h. chestnut  almond  sesame seed
i. walnut  pumpkin seed  peanut
## Word Sequence – physical attributes

**Instructions:** I’m going to read out a list of objects to you. I want you to listen carefully and then say them in order from **longest** to **shortest** and **tallest** to **shortest**. So for instance if I was to say *pen, nail, ruler* you would say, *ruler, pen, nail.*

### Longest to Shortest

<table>
<thead>
<tr>
<th>a. drinking straw</th>
<th>finger</th>
<th>dining table</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. ship</td>
<td>truck</td>
<td>car</td>
</tr>
<tr>
<td>c. fishing pole</td>
<td>paper clip</td>
<td>spanner</td>
</tr>
<tr>
<td>d. tree</td>
<td>twig</td>
<td>branch</td>
</tr>
<tr>
<td>e. pond</td>
<td>river</td>
<td>lake</td>
</tr>
<tr>
<td>f. whale</td>
<td>sardine</td>
<td>shark</td>
</tr>
</tbody>
</table>

### Shortest to Tallest

<table>
<thead>
<tr>
<th>a. Labrador</th>
<th>Great Dane</th>
<th>Chihuahua</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. Gorilla</td>
<td>Marmoset</td>
<td>Baboon</td>
</tr>
<tr>
<td>c. Antelope</td>
<td>Giraffe</td>
<td>Warthog</td>
</tr>
<tr>
<td>d. mountain</td>
<td>mound</td>
<td>hill</td>
</tr>
<tr>
<td>e. house</td>
<td>skyscraper</td>
<td>dollhouse</td>
</tr>
<tr>
<td>f. flower</td>
<td>tree</td>
<td>bush</td>
</tr>
</tbody>
</table>
Word Sequence – physical attributes

Instructions: I’m going to read out a list of objects to you. I want you to listen carefully and then say them in order from heaviest to lightest. So for instance if I was to say tissue, frying pan, apple you would say, frying pan, apple, tissue.

Heaviest to Lightest

a. tennis ball   tennis racquet   tissue paper
b. cannon ball   orange      basketball
c. hairbrush    broom       toothbrush
d. tugboat      sailboat    cargo ship
e. bicycle      motorbike   skateboard
f. model plane  jet aircraft glider
g. wasp         fly        sparrow
h. rhinoceros   guinea pig  wombat
i. wren         pigeon     eagle
j. mobile phone  computer   flat screen TV
k. hardcover book  newspaper  brochure
l. cup           saucepan   fridge
Word Sequence – physical attributes

Instructions: I’m going to read out a list of objects to you. I want you to listen carefully and then say them in order from thickest to thinnest. So for instance if I was to say pencil, brick, mobile phone you would say, brick, mobile phone, pencil.

Thickest to Thinnest

a. pin    crayon    matchstick
b. postcard    dictionary    picturebook
c. human hair    rope    string
d. carrot    spaghetti    watermelon
e. leg    finger    arm
f. branch    twig    tree trunk
g. cheetah    hippopotamus    horse
h. vinyl record    steering wheel    car tire
i. fridge    lunch box    CD cover
j. dart    harpoon    rocket
k. key    hammer    pin
l. DVD    cake    barrel
**Word Sequence – physical attributes**

**Instructions:** I’m going to read out a list of objects to you. I want you to listen carefully and then say them in order from **coldest** to **warmest**. So for instance if I was to say *hot potato, ice cube, banana*, you would say, *ice cube, banana, hot potato.*

### Coldest to Warmest

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Sahara Desert</td>
<td>Arctic</td>
</tr>
<tr>
<td>b.</td>
<td>erupting volcano</td>
<td>Siberia</td>
</tr>
<tr>
<td>c.</td>
<td>Summer</td>
<td>Winter</td>
</tr>
<tr>
<td>d.</td>
<td>apple</td>
<td>hot soup</td>
</tr>
<tr>
<td>e.</td>
<td>ice cube</td>
<td>chilli</td>
</tr>
<tr>
<td>f.</td>
<td>jam</td>
<td>hot donut</td>
</tr>
<tr>
<td>g.</td>
<td>sauna</td>
<td>ice rink</td>
</tr>
<tr>
<td>h.</td>
<td>mountain top</td>
<td>rainforest</td>
</tr>
<tr>
<td>i.</td>
<td>cold milk</td>
<td>hot tea</td>
</tr>
<tr>
<td>j.</td>
<td>backyard pool</td>
<td>frozen lake</td>
</tr>
<tr>
<td>k.</td>
<td>snow skiing</td>
<td>water skiing</td>
</tr>
<tr>
<td>l.</td>
<td>hot springs</td>
<td>sea in Winter</td>
</tr>
</tbody>
</table>
Temporal sequence exercises

Instructions: I’m going to read a sentence that requires you to listen carefully to a sequence of steps and then work out what happens in which order. Explain your answer.

a. When you draw a picture and you want to correct a mistake, do you use the eraser/rubber before or after you create a drawing?

b. When you ride your bike, do you start pedalling before or after you put your helmet on?

c. What happens first in a game of golf, you walk down the fairway to the green or you hit the ball off the tee?

d. What happens first when you watch a movie, you push ‘play’ or you put the DVD in the DVD player?

e. Which happens first when you brush your teeth, you put toothpaste on your toothbrush or you rinse your mouth with water?

f. When you go to sit in a car, which happens first, you put on your seatbelt or you open the car door?

g. What happens first when you play a computer game, you start the game or start the computer?

h. Which happens first when eating ice-cream, you take the ice-cream out of the freezer, or you scoop the ice-cream into a bow
i. What happens first when you send a birthday card, seal the envelope or write a greeting on the card?

j. Which do you do first when putting on shoes, tie up your shoelaces or put your socks on?

k. What happens first in the morning, you have breakfast or you go to school?

l. What is the first thing that happens when you do the dishes, put the plug in the sink or fill the sink with water?

m. When you buy groceries from the supermarket, do you put the groceries in the car before or after you pay at the checkout?

n. What is the first thing you do when eating toast, spread butter on the toast or take the toast out of the toaster?

o. Which do you do first when making a salad, pour on the salad dressing or arrange the lettuce leaves and tomatoes?

p. Which do you do first when catching a bus, sit down or pay the driver the bus fare?

q. Which do you have first, the dessert, the entrée or the main meal?

r. What should you do first when vacuuming, turn on the vacuum cleaner, vacuum the carpet, plug in the power cord?

s. When riding a bike, what is the first thing you must do, start pedalling, put your helmet on, or hold the handle bar?
Answer Section

Smallest to Largest

a. mouse – dog – horse  b. cat – pig – cow  c. rat – chicken sheep
d. flea – fly – butterfly  e. ladybug – caterpillar – goliath beetle f. midge –
fly - grasshopper
g. sparrow – seagull - eagle h. hummingbird – duck - condor i. starling –
swan – albatross j. meerkat – lion – elephant k. hyena – leopard – giraffe
l. monkey – warthog - buffalo

Smallest to Largest

a. grape – apple - grapefruit b cherry – orange - watermelon c. plum –
banana - rockmelon d. pea – carrot - pumpkin e. bean – tomato -
cabbage f. brussel sprout – potato - eggplant g. peanut – macadamia nut
– brazil nut h. sesame seed – almond - chestnut i. pumpkin seed –
peanut - walnut

Longest to Shortest

a. dining table – drinking straw - finger b. ship – truck - car c. fishing pole
whale – shark – sardine g. tree – bush tree
Shortest to Tallest


Heaviest to Lightest


Thickest to Thinnest

Coldest to Warmest

a. Arctic – England – Sahara Desert  
b. Siberia – beach in Fiji – erupting volcano  
c. Winter – Spring Summer  
d. hot soup – apple – icy pole  
e. chilli – tomato – ice cube  
f. hot donut – jam – ice-cream  
g. ice-rink – concert hall – sauna  
h. mountain top – rainforest – desert  
i. hot tea – tap water – cold milk  
j. frozen lake – backyard pool – heated swimming pool  
k. snow skiing – water skiing – desert trek  
l. sea in Winter – lagoon – hot springs

Temporal Sequence Exercises

a. after

b. after

c. hit the ball

d. put the DVD in the player

e. put toothpaste on toothbrush

f. open the car door

g. start the computer

h. ice-cream out of freezer
i. write a greeting
j. put your socks on

k. have breakfast
l. put the plug in

m. after

n. take toast out of toaster

o. arrange lettuce leaves

p. pay the far

q. the entrée

r. plug in power cord

s. open word program