Acknowledgements: The CST was developed at the Hearing Aid Research Laboratory of The University of Memphis with primary support from the Department of Veterans Affairs Rehabilitation Research and Development Service. Support was also provided by the Center for Research Initiatives and Strategies for the Communicatively Impaired (CRISCI), The University of Memphis.
INTRODUCTION

The Connected Speech Test (CST) provides objective quantification of the intelligibility of sets of sentences about different topics. The test was recorded with both auditory and visual stimuli. This DVD was produced from the original video laser disk. The video image shows a close-up view of the talker’s head and shoulders. As a measure of everyday speech, the CST has high content validity (conversationally produced connected speech), good sensitivity, and several equivalent forms. The user is strongly encouraged to consult the articles, cited at the end of this introduction, about the development and administration of the test and reliability of the data from normal-hearing and hearing-impaired listeners.

The DVD contents include:

- 3 calibration signals
- 8 Practice passages
- 16 Learning Passages
- 8 audio-visually equivalent sets of six passages each.

All passages are recorded with the talker on the right channel and a competing babble on the left channel. The talker is a female who produces speech of average intelligibility (Cox, Alexander, and Gilmore, JASA, 1987). The multi-talker babble can be adjusted to simulate the signal to babble ratio (SBR) conditions encountered in everyday listening situations.

Audio calibration signals

Three types of calibration signals are provided:

- the CST-shaped Noises are the calibration signals produced for the audio CD. These signals were not on the original laser disk. The calibration noises were created for the audio CD by filtering random noise so that the long-term level in each 1/3-octave band is essentially the same as that in the corresponding test materials. On the right channel, the calibration noise has the same 1/3-octave band spectrum and level as the talker (the RMS difference between talker and calibration noise in the 1/3-octave bands from 200 Hz to 10 kHz is 0.66 dB). On the left channel, the calibration noise has the same 1/3-octave band spectrum and level as the multi-talker babble (the RMS difference between babble and calibration noise in the 1/3-octave bands from 200 Hz to 10 kHz is 0.53 dB). Note that this relationship between test materials and calibration noise was computed over the entire corpus of test materials. For any individual sentence or passage, there will probably be differences between the spectrum of the calibration noise and that of the test materials. If the calibration noises are set so that the audiometer VU meter readings are -5 dB (left CD channel) and -4 dB (right CD channel), both the test passages and the babble will have peak meter excursions near 0 dB on the VU meter.
- The Uncorrelated CST Babble contains several minutes of CST babble on both channels. Material on the left channel is uncorrelated with that on the right channel. Excerpts from this may be used (using a second DVD and player) if it is desired to present uncorrelated babble from additional loudspeakers as a competing message. These signals are also available on the audio CD.

- The Speech-shaped Noise approximates the long-term spectrum of the talker and the competing babble. These noise signals were part of the original laser video disk. If the calibration noises are set to VU meter readings of -5 dB on both channels, both the speech passages and the babble will have peak readings near -3 dB on the VU meter. Note that, on the right channel, the long-term overall level of this calibration noise is one dB higher than the mean long-term overall level of the test passages. On the left channel the long-term overall level of this calibration noise is 3 dB lower than the mean long-term overall level of the competing babble associated with the test passages.

  Note: Due to a programming error, the speech-shaped noise is not accessed when the built-in menu option for “speech-shaped noise” is selected. Instead, the CST-shaped noises are played. The speech-shaped noise is not available at this time.

Test passages:

Though the 48 test passages are equally intelligible, on average, for normal-hearing listeners, they are not necessarily equivalent for hearing-impaired listeners. There is additional variation with the introduction of visual clues. Thus, the test passages have been arranged on this disk into 8 sets of 6 passages each. The 8 sets of passages are equivalent on average for hearing-impaired listener-viewers. Scores should be averaged across the 6 passages of a set to produce the score for a particular listening condition when the test is presented audio-visually.

Each passage of speech comprises 9 or 10 sentences about a familiar topic. The listener should be informed of the passage topic prior to presentation. The video presents the text topic word preceding the passage. It is recommended that the user pause the DVD while the topic word is showing so that the listener can take note of it. Following the topic word, the passage should be played one sentence at a time. The passage score is based on the proportion of 25 scoring words correctly repeated.

The Test Passages were recorded at a conversational rate, with natural timing between sentences. Manual presentation of this material requires that the user pause the DVD presentation after each sentence of a passage to allow the listener to repeat each sentence, and for the user to score the correct words. A complete script of all passages and their scoring words follows. This script can be printed or copied for use in manual scoring.

The 8 Practice Passages are similar in structure and content to the test passages but have slightly poorer reliability. When the practice passage is novel to the listener, the scores should be reasonably close to performance on the test passages. Practice Passages may be used to select an appropriate SBR for testing or to acclimate the listener to the task.
Note that there is a period of rapid learning when listeners are first exposed to the CST task and whenever the SBR is changed. Hence, it is advisable to administer Practice passages before test data are collected. Also, reliability is improved if one of the four Practice pairs is presented each time test conditions are changed.

The 16 Learning Passages are also similar in structure to the test and practice passages but with relatively poorer reliability. They are used primarily to familiarize the listener with the CST task and the characteristics of the talker. Scores on these passages are not necessarily predictive of the listener's performance on the test passages. Note that the final sentence of the last Learning Passage ("Kidney") was not recorded on the video laser disk due to space limitations and, therefore, does not appear on this DVD.

Pointers for test administration:

- Because of the learning effect, repeated presentation of a sentence is usually not advisable. A sentence can be replayed if something happens during the sentence presentation which would prevent the listener from hearing the sentence. Some common examples of this would be if the listener sneezes or coughs while the sentence plays, or the listener starts talking as the sentence plays.
- Reliability of the test is improved if a practice passage is administered each time the test conditions are changed. This would include changes in the SBR or presentation level; aided vs. unaided conditions; and changes in hearing aid settings.
- A listener tends to remember test sentences. To minimize memory effects, allow 2-3 months to elapse before administering a test passage a second time.

Please refer to these articles for further and more detailed information about the CST and its development:

## Table of Contents for Audio-visual Test Passage Sets

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Text for the CONNECTED SPEECH TEST
(scoring words are capitalized)

Test Passage Pair 1 (Window/Glove)

Psg: 1-WINDOW

Windows PROVIDE LIGHT and air to ROOMS.
Windows were ONCE COVERED with CRUDE SHUTTERS.
Later, oiled PAPER was USED for windowpanes.
GLASS windows FIRST appeared in ancient Rome.
COLORED glass was used in European WINDOWS.
SOME CHURCHES were FAMOUS for their BEAUTIFUL windows.
These windows DISPLAYED PICTURES from the BIBLE.
PIECES of glass were HELD together by lead.
SUCH windows MAY be seen in French cathedrals.
English churches also contain STAINED glass windows.

Psg: 2-GLOVE

Gloves are CLOTHING WORN ON the HANDS.
The WORD "GLOVE" MEANS "palm of the hand".
CRUDE GLOVES were WORN by PRIMITIVE MAN.
Greeks wore WORKING gloves to PROTECT their hands.
The ROMANS USED gloves as a sign of RANK.
Knights used to fasten gloves to their helmets.
The gloves SHOWED their DEVOTION to their LADIES.
A glove thrown on the GROUND SIGNALED a challenge.
Knights threw them at their enemy's feet.
FIGHTING STARTED WHEN the enemy picked up the glove.
Test Passage Pair 2 (Umbrella/Giraffe)

Psg: 3-UMBRELLA

The NAME "umbrella" means small shadow.
Umbrellas WERE first used in ANCIENT Egypt.
THEY GAVE protection FROM the fierce SUNSHINE.
SLAVES held UMBRELLAS over their MASTERS.
In Egypt today, many people CARRY umbrellas.
In EARLY Rome, ONLY WOMEN used umbrellas.
IF a MAN did, he WAS CONSIDERED sissy.
Umbrellas were USED by both SEXES in ENGLAND.
TODAY, people use umbrellas to keep OUT the RAIN.
Umbrellas USED as sunshades are called parasols.

Psg: 4-GIRAFFE

The giraffe is the tallest wild ANIMAL.
It is three times taller than a man.
A full grown giraffe is eighteen FEET high.
The giraffe has an extremely LONG NECK.
The neck HAS ONLY seven NECKBONES.
The GIRAFFE'S BODY is about the SIZE of a HORSE'S.
The BODY is SHAPED LIKE a triangle.
Africa is the only COUNTRY WHERE giraffes LIVE WILD.
LARGE GROUPS of them are FOUND ON the PLAINS.
They live there with LIONS and ELEPHANTS.
**Test Passage Pair 3 (Lung/Dove)**

**Psg: 5-LUNG**

The lungs are the **ORGANS** of breathing.  
They **LIE** in the **CENTER** of the chest.  
The heart lies **BETWEEN** the lungs.  
The two lungs **ARE SURROUNDED** by the **RIBS**.  
**BOTH ARE JOINED** together by the **WINDPIPE**.  
This airway **EXTENDS FROM** the mouth and **NOSE**.  
The lungs **CONTAIN SEVERAL MILLION AIR** cells.  
**BLOOD** is pumped **THROUGH** the lungs by the **HEART**.  
**OXYGEN** is carried to the **CELLS THIS WAY**.

**Psg: 6-DOVE**

A dove is a small, **TRIM BIRD**.  
The **BEST** known is the **MOURNING** dove.  
The mourning **DOVE** lives in **NORTH** America.  
Its **NAME COMES** from its **SAD MATING** call.  
It is sometimes **INCORRECTLY CALLED TURTLEDOVE**.  
The mourning dove is about a **FOOT LONG**.  
Its **BODY** is **BROWN** with **GRAY** wings.  
It **FEEDS** on **GRAINS**, grasses and **WEEDS**.  
The mourning dove is a **CARELESS HOUSEKEEPER**.  
Its **NEST** is just some **STICKS** tossed together.
Test Passage Pair 4 (Carrot/Grass)

Psg: 7-CARROT

A carrot is a **VEGETABLE RELATED** to parsley.

The **LONG** stem of the carrot **GROWS UNDERGROUND**.

It is **THIS STEM** that most people **EAT**.

The **LEAVES** of the **CARROT** are also eaten.

They are often used to **FLAVOR** foods.

Spring **CROPS** are **GROWN** in the western **STATES**.

The crop is **HARVESTED** in one **HUNDRED** days.

Fall crops **ARE GROWN** in the **NORTHERN STATES**.

Winter **HARVESTS** usually come from **CALIFORNIA**.

**WINTER** crops are also **GROWN** in **TEXAS**.

Psg: 8-GRASS

Grass **CAN GROW** in all climates.

**THERE** are many forms of grasses.

**MANY GRASSES** are important food **SOURCES**.

Some grasses **GROW** higher than a **MAN'S HEAD**.

**AMONG THESE** are bamboo and sugar cane.

Other types are **ONLY** a **FEW INCHES TALL**.

Some grasses **ARE AS SLENDER** as threads.

Others are stiff enough to **STAND** a heavy **SNOW**.

**MOST** grasses are **FLOWERING PLANTS**.

These flowers bloom **MAINLY** in the **SPRING**.


Test Passage Pair 5 (Nail/Woodpecker)

Psg: 9-NAIL

Nails are used to FASTEN WOOD TOGETHER.

Pioneers USED WOODEN pegs INSTEAD of nails.

One END of a nail is quite POINTED.

The POINT creates an OPENING for the NAIL.

It also helps KEEP the WOOD from SPLITTING.

At the nail's OTHER end is a HEAD.

It provides a STRIKING SURFACE for the hammer.

It also COVERS the nail HOLE in the wood.

There is a SPECIAL NAIL for every PURPOSE.

For MOST purposes a ROUND nail will do.

Psg: 10-WOODPECKER

The woodpecker is a bird with a STRONG BEAK.

It bores HOLES in TREES looking for INSECTS.

Woodpeckers LIVE in all parts of the world.

The TOES of woodpeckers ARE VERY UNUSUAL.

Two POINT FORWARD and two face BACKWARD.

This allows the BIRD to cling to TREES.

The TAIL FEATHERS of a woodpecker are STIFF.

THEY can USE their tails as a SUPPORT.

They also use their tails to grasp TREES.

Woodpeckers HAVE long TONGUES with pointed TIPS.
Test Passage Pair 6 (Owl/Vegetable)

Psg: 11-OWL

Owls HUNT alone at NIGHT for food.

THESE BIRDS kill and EAT small ANIMALS.

They are BIRDS of prey, like EAGLES.

OWLS defend our GARDENS by eating MICE.

They are CLOSELY related to night HAWKS.

There are five HUNDRED different KINDS of owls.

They live throughout COLD and TROPICAL climates.

Owls USUALLY live ALONE in the FOREST.

SOMETIMES they exist on remote SEA islands.

Owls are KNOWN FOR their SOLEMN expression.

Psg: 12-VEGETABLE

The WORD "vegetable" HAS several MEANINGS.

It is USED in the phrase "vegetable KINGDOM".

This REFERS to the entire plant WORLD.

SOME WILD vegetables can be eaten.

Vegetables COME from the LEAVES and FLOWERS of plants.

Some vegetables come FROM a plant's ROOTS.

Vegetables can be EATEN raw or COOKED.

The BEST way to COOK vegetables is by STEAMING.

THEY are USUALLY chopped or MASHED before eaten.

Vegetables are VERY DIFFERENT FROM fruits.
Test Passage Pair 7 (Lemon/Violin)

Psg: 13-LEMON

A LEMON is an oval, yellow citrus FRUIT.
It GROWS in Southern California and FLORIDA.
Lemon trees are MEDIUM sized, WITH SPREADING BRANCHES.
They have PALE GREEN LEAVES and large flowers.
The flowers are WHITE, with PURPLE UNDERNEATH.
The lemon FLOWER smells sweet.
SOME types of lemons have NO seeds.
OTHER types have MANY seeds.
Their FRUIT is a SPECIAL TYPE of CITRUS.
It usually has a SOUR TASTE.

Psg: 14-VIOLIN

The violin is the best KNOWN stringed INSTRUMENT.
EARLY VIOLINS did not produce clear tones.
These violins were VERY ROUGH SOUNING.
LATER violin MAKERS improved their craft.
Their VIOLINS were EXTREMELY well made.
The VIOLIN BECAME an INSTRUMENT for beautiful MUSIC.
Only SMALL CHANGES have occurred in violin DESIGN.
Violins must be MADE with GREAT care.
The WOOD USED greatly influences the tone.
The parts MUST be glued TOGETHER by HAND.
Test Passage Pair 8 (Wheat/Ice)

Psg: 15-WHEAT

Wheat is a **CHIEF SOURCE** of food.

**MILLIONS** of **PEOPLE** **DEPEND** on wheat **PRODUCTS**.

It is the most **WIDELY** used human **FOOD**.

Americans **PRIZE** wheat **MORE HIGHLY** than **OTHER** grains.

Wheat is **GROWN** on the **PLAINS** of the United States.

More wheat is **PRODUCED** there than **RICE**.

However, rice is **CHEAPER** to **PRODUCE**.

It **CAN** be **PLANTED** and **HARVESTED** by **HAND**.

Rice is **IMPORTANT** to **OVERPOPULATED** countries.

It is their **PRIMARY** source of nutrition.

Psg: 16-ICE

Ice forms when **WATER REACHES** the freezing **POINT**.

This point **OCCURS** at thirty-two degrees.

Lower **TEMPERATURES** are needed to freeze impure **WATER**.

**SNOWFLAKES** and **FROST** are forms of **ICE**.

Large bodies of water **FREEZE** very **SLOWLY**.

**MOVING** water takes **EVEN LONGER** to freeze.

It **TAKES DAYS** for ice to form on a **LAKE**.

It **TAKES** weeks for **RIVERS** to freeze.

Ice can also **FORM** on **ROADS** and **SIDEWALKS**.

This **CAN** make **TRAVELING** very **DANGEROUS**.
Test Passage Pair 9 (Donkey/Guitar)

Psg: 17-DONKEY

Donkeys are SMALLER, sturdier relatives of HORSES. The WILD donkey is SHAPED like a ZEBRA. It is four FEET high at the SHOULDERS. The donkey's COAT is GRAY and black. It HAS a DARK LINE along its BACK. This ANIMAL is EXTREMELY INTELLIGENT. SURPRISINGLY, it is also a SWIFT RUNNER. Man has TAMED donkeys for his personal use. Donkeys are OFTEN used as BEASTS of burden. All donkeys are NOTED for their HUGE EARS.

Psg: 18-GUITAR

The guitar is a stringed MUSICAL INSTRUMENT. Guitars are used to ACCOMPANY SINGING. They are played in GROUPS with other INSTRUMENTS. A POPULAR style of guitar HAS a flat top. It is made of wood and HAS six STRINGS. You TUNE a guitar BY comparing OCTAVE NOTES. The FINGERBOARD is HELD with the LEFT hand. The MUSICIAN'S right hand PULLS the strings. He plays BASS NOTES with his RIGHT thumb. OTHER notes are PLAYED with the first THREE fingers.
**Test Passage Pair 10 (Envelope/Grasshopper)**

**Psg: 19-ENVELOPE**

An **ENVELOPE** is a **POUCH CONTAINING** a letter.

The **ADDRESS** is **WRITTEN** on the outside.

Envelopes **MAY** be used to **PROTECT IMPORTANT** documents.

**EACH** envelope is a **FOLDED** sheet of **PAPER**.

One flap is **COVERED** with **GLUE**.

The **ENVELOPE** is **GLUED** shut before mailing.

Self sealing envelopes use a **SPECIAL GUM**.

**THEY NEED** not be **MOISTENED** to stick shut.

Envelopes were **FIRST MADE** in eighteen **THIRTY** nine.

**BEFORE** that time, **LETTERS** were simply folded.

**Psg: 20-GRASSHOPPER**

“**GRASSHOPPER**” refers to **TWO** types of **BUGS**.

They **HAVE** long, **THIN** back legs.

Grasshoppers leap **THROUGH** fields and meadows.

They can **JUMP** many times their own **LENGTH**.

A man could never jump **THAT FAR**.

Grasshoppers include all the **INSECTS CALLED** locusts.

The **DIFFERENCE BETWEEN** the **TWO** is **THEIR** feelers.

Locusts **HAVE** much shorter **FEELERS** than **GRASSHOPPERS**.

Grasshoppers are **MORE GREEN** in **COLOR** than **LOCUSTS**.

Locusts **ARE USUALLY** brown colored.
Test Passage Pair 11 (Lettuce/Dictionary)

Psg: 21-LETTUCE

Lettuce is a **GREEN VEGETABLE** with **CRISP** leaves.
It is used to **MAKE** healthy **SALADS**.
It **GROWS** in the northern **HALF** of the **WORLD**.
There are **LOOSE** leaf and **HEAD** lettuces.
Loose **LEAF** lettuce is **POPULAR** in home gardens.
This **VARIETY** is found **MORE** often in **EUROPE**.
Its **LEAVES CURL LOOSELY** inside one another.
Most lettuce **GROWN** in America is **HEAD** lettuce.
Its **LEAVES FOLD** tightly **OVER** one another.
The leaves form a **BALL CALLED** a head.

Psg: 22-DICTIONARY

A dictionary **LISTS** the meanings of words.
**IT LETS** a **PERSON DEFINE** a word quickly.
A dictionary **CONTAINS** over six **HUNDRED** thousand words.
**MOST** educated **ADULTS** know **ABOUT TEN** thousand words.
A **FIFTH** grade child **KNOWS** two **THOUSAND** words.
Adults and children **NEED** to use dictionaries.
**DICTIONARIES TELL** us many **USEFUL** things about words.
Every **DICTIONARY SHOWS** the **CORRECT** spelling of a **WORD**.
It also **SHOWS** how a word is **PRONOUNCED**.
**CREATIVE** writing would be difficult without dictionaries.
Test Passage Pair 12 (Lawn/Cactus)

Psg: 23-LAWN

A lawn is an AREA planted WITH grass.
GREEN, trimmed lawns are a beautiful SIGHT.
People LIKE to plant lawns around their HOMES.
Hospitals OFTEN HAVE lawns AROUND them.
MOST public BUILDINGS have LAWNS.
Lawns HELP to keep SOIL from eroding.
A GOOD lawn is VERY thickly PLANTED.
There are FOUR hundred plants PER square FOOT.
EACH plant has several BLADES of grass.
There are several DIFFERENT KINDS of GRASSES.

Psg: 24-CACTUS

The cactus is a plant with SHARP thorns.
Five HUNDRED DIFFERENT kinds grow in MEXICO.
NEARLY all cactus PLANTS LIVE in America.
Cactus LIVE best WHERE there is little RAINFALL.
MOST CACTUS is found in the DESERT southwest.
PLANTS usually make food in their LEAVES.
The cactus does NOT have any LEAVES.
They HAVE DISAPPEARED so the cactus can stay moist.
The cactus stores the WATER IN its STEM.
DESERT cactus FLOWERS BLOOM in the spring.
Test Passage Pair 13 (Cabbage/Gold)

Psg: 25-CABBAGE

Cabbage is the **MOST COMMON** garden **VEGETABLE**. It has **THICK LEAVES** which curl inward. They form a **ROUND HEAD** eight inches **ACROSS**. The **WORD** cabbage is Latin for "**HEAD**". The **CABBAGE** plant can live through **SEVERAL FREEZES**. It also **GROWS** in the heat of **SUMMER**. **EARLY SPRING** cabbage is **PLANTED** in greenhouses. This protects the **YOUNG PLANTS FROM FROST**. **AFTER** six **WEEKS** they may be moved outdoors. **TRANSPLANTING** is done before the end of spring.

Psg: 26-GOLD

Gold was one of the first known **METALS**. For **MANY YEARS** gold has **SYMBOLIZED WEALTH**. **EVEN** the early cave man knew **ABOUT** gold. **ANCIENT EGYPTIANS** hammered gold into **LEAVES**. They used these leaves to **DECORATE** their **TOMBS**. A **SCIENCE** grew up around efforts to make gold. It **STARTED DURING** the **MIDDLE** ages. The ancient scientists **NEVER ACHIEVED** their **GOAL**. Modern **SCIENTISTS** have made these **DREAMS** come **TRUE**. **THEY** now **MAKE** gold by a **CHEMICAL** process.
**Test Passage Pair 14 (Weed/Chimney)**

**Psg: 27-WEED**

Weeds are considered **WORTHLESS PLANTS**.

The **DIFFERENCE BETWEEN** weeds and useful **PLANTS** is unclear.

**WHERE** a **WEED GROWS** determines its usefulness.

**OATS GROWING** in a **CORNFIELD** are considered weeds.

Oats growing in an **OATFIELD** are useful **PLANTS**.

Much crop damage is **CAUSED BY** weeds.

Experts estimate it at **FIVE** dollars per person.

**FARMERS SPEND THOUSANDS** of **DOLLARS** for **WEED** sprays.

Chemicals used to **KILL** weeds can be harmful.

These chemicals are **SOMETIMES** found in **DRINKING WATER**.

**Psg: 28-CHIMNEY**

A chimney **CARRIES SMOKE** from a **FIREPLACE**.

It **ALSO SUPPLIES** the fire with **OXYGEN**.

Warm air is **LIGHTER** than **COLD** air.

Warm air **ABOVE** the fire **TENDS** to rise.

As the **WARM** air **RISES**, cold air rushes in.

A draft is **CREATED** in the **CHIMNEY**.

The draft **PROVIDES** the oxygen **NEEDED** for the **FIRE**.

Chimneys must **STAND HIGHER** than the **BUILDING**.

Otherwise, the chimney **WILL** not **DRAW PROPERLY**.

**CHIMNEYS** can **IMPROVE** the appearance of a home.
**Test Passage Pair 15 (Lead/Calendar)**

Psg: 29-LEAD

Lead is a **SOFT, HEAVY**, metallic element.

It is **OFTEN** combined with other **METALS**.

**MANY USEFUL OBJECTS** contain some lead **MIXTURE**.

The Romans **USED LEAD** for **WATER PIPES**.

Their **PUBLIC** baths were lined **WITH** lead.

The **WORD** "plumber" means a **WORKER** in lead.

Lead is **ONE** of the **HEAVIEST KNOWN** metals.

It is **ELEVEN** times as **HEAVY** as **WATER**.

The **EXPRESSION** "as HEAVY as lead" is common.

It **DESCRIBES** an object of great weight.

---

Psg: 30-CALENDAR

A calendar is a **SYSTEM** for **RECORDING TIME**.

All **CALENDARS INCLUDE** the day and the **YEAR**.

**THESE** are two **NATURAL DIVISIONS** of time.

Both are based **ON** the **EARTH** and the **SUN**.

The **MONTH** depends on the **APPEARANCE** of the **MOON**.

The week **IS** an **ARTIFICIAL** division of **TIME**.

**WEEKS** are not **BASED** on observable **EVENTS**.

The calendar was a **GREAT HUMAN** achievement.

**THROUGH** it, men learned to measure **TIME**.
Test Passage Pair 16 (Lion/Zebra)

Psg: 31-LION

The lion is a **WILD MEMBER** of the cat **FAMILY**. 
**IT** is related to the tiger and the **BOBCAT**. 
The lion and **TIGER** are the largest **CATS**. 
The **TIGER** is the **FIERCEST** of all. 
The lion is a strong, **WILD CREATURE**. 
It **HAS** a large, **HEAVY** and powerful **BODY**. 
**ITS** long **MANE** gives it a proud appearance. 
The lion is **KNOWN** as the "**KING** of **BEASTS**". 
Lions are also **CALLED** "**LORDS** of the Jungle". 
**HOWEVER**, they are **SELDOM FOUND** in the **JUNGLE**.

Psg: 32-ZEBRA

A zebra is an animal that **LIVES** in Africa. 
It is a wild, **GRASS** eating **ANIMAL**. 
It **LOOKS VERY** much like a **HORSE**. 
**MOST** zebras **STAND** four to five **FEET** high. 
The zebra has a **SURPRISINGLY** different **COLOR** pattern. 
Zebras **HAVE PARALLEL** black and **WHITE STRIPES**. 
The stripes are arranged in **EXACT DESIGNS**. 
These stripes **RUN** all **OVER** their **BODIES**. 
They even run **UP** and **DOWN** **THEIR** faces. 
The stripes **ALSO** appear on the zebra's **EARS**.
Test Passage Pair 17 (Lizard/Wolf)

Psg: 33-LIZARD

The LIZARDS ARE the CLOSEST RELATIVES of SNAKES.

SOME lizards look LIKE snakes with LEGS.

Some LARGE ones look like CROCODILES.

They come in a VARIETY of SHAPES and COLORS.

Lizards have MANY WAYS of moving and fighting.

LIZARDS and SALAMANDERS are often CONFUSED.

They LOOK very much ALIKE BUT aren’t related.

Up NORTH there are few lizards but MANY salamanders.

In the SOUTHWEST, just the OPPOSITE is true.

Psg: 34-WOLF

The wolf IS a MEMBER of the DOG family.

A wolf LOOKS like a SKINNY wild DOG.

It has a WIDE HEAD and pointed NOSE.

Wolves LIVE in North AMERICA, Europe, and Asia.

Wolves USED to LIVE all over the United STATES.

GRAY wolves are Seldom SEEN nowadays.

THEY live in the Rockies and NORTHERN states.

Wolves HUNT in packs and MATE for LIFE.

The average wolf pack consists of TEN wolves.

A female wolf gives BIRTH every other YEAR.
Test Passage Pair 18 (Orange/Oyster)

Psg: 35-ORANGE

The orange is the most important **CITRUS FRUIT**.
It is a **GOOD** source of **VITAMIN C**.
It **CAN BE** eaten OR made **INTO** juice.
Eating oranges **MAY PREVENT** the common **COLD**.
There are **TWO** different kinds of oranges.
The sweet orange is **EATEN** in the United States.
It is **THOUGHT** to have **COME FROM CHINA**.
The other **KIND** of orange is **MORE** bitter.
It **IS** used often in **COOKING**.
The **TANGERINE** is often **INCORRECTLY CALLED** an **ORANGE**.

Psg: 36-OYSTER

Oysters are animals that live in **SEA** shells.
The oyster lives in many **PARTS** of the **WORLD**.
It **LIVES MOSTLY** in quiet, shallow **WATERS**.
It **IS MAN’S** most **VALUABLE SEAFOOD**.
The oyster's **SHELL** forms a **SHELTER**.
The **SHELL** is divided into two halves.
They are **FASTENED TOGETHER** at **ONE END**.
The left **HALF** is larger and **THICKER**.
**A MUSCLE ATTACHES** the soft **BODY** to the **SHELL**.
This muscle **HELPS** the **OYSTER** open the shell.
Test Passage Pair 19 (Dice/Eagle)

Psg: 37-DICE

DICE are cubes USED in games of chance.
They may be MADE of ivory, wood, OR PLASTIC.
A SINGLE such CUBE is CALLED a die.
Each SIDE of a DIE has ONE to six dots.
DOTS on OPPOSITE SIDES add up to SEVEN.
Players TOSS the dice on a flat SURFACE.
The NUMBERS that come up DECIDE the game.
The COMBINATION of numbers DEPENDS on chance.
A GAME of dice is THEREFORE a gamble.
Gambling is not legal in MOST STATES.

Psg: 38-EAGLE

The eagle is a large bird of PREY.
It has powerful WINGS and SHARP eyes.
The EAGLE is a SYMBOL of courage and freedom.
The BALD eagle is America's NATIONAL BIRD.
THERE are SEVERAL different kinds of eagles.
Each TYPE IS very DIFFERENT in SIZE and color.
Eagles HAVE strong beaks and POWERFUL CLAWS.
The eagle's BEAK is as long as its HEAD.
The beak's upper HALF hooks over the LOWER.
The eagle USES its POWERFUL beak to CATCH its PREY.
Test Passage Pair 20 (Ear/Liver)

Psg: 39-EAR
The ear is an important **SENSE ORGAN**.
The ear **HAS** two main **PURPOSES**.
It lets **MAN HEAR** and **MAINTAIN** his balance.
**GOOD** hearing permits **PEOPLE** to understand **SPEECH**.
Through speech, we **EXCHANGE** ideas and **OPINIONS**.
**HEARING ALSO** makes man **ARE** of **DANGER**.
The ear’s **BALANCE** mechanism helps us walk **UPRIGHT**.
**DAMAGE** to this section causes **STAGGERING**.
The **PERSON** also **GETS** disoriented and **DIZZY**.
This kind of dizziness is **CALLED VERTIGO**.

Psg: 40-LIVER
The liver is a very important **INTERNAL** organ.
Its **MAIN FUNCTION** is to filter the **BLOOD**.
The liver is the **LARGEST** organ in **MAN**.
It can **WEIGH** three to four **POUNDS**.
The liver is **DARK RED** or **CHOCOLATE** colored.
It is **LOCATED** in the **MIDDLE SECTION** of the **BODY**.
It **FITS** closely to the intestines and kidneys.
It is **POSSIBLE** to **TRANSPLANT** a liver.
This **ADVANCED** operation is **VERY** expensive.
**HOWEVER**, it is **RESPONSIBLE** for **SAVING MANY LIVES**.
**Test Passage Pair 21 (Leopard/Eye)**

**Psg: 41-LEOPARD**

The leopard is a **MEMBER** of the **CAT** family.

It is the **THIRD** largest cat in the **WORLD**.

**ONLY** the **LION** and tiger are **LARGER**.

Leopards live in the **JUNGLES** of Africa.

They are **EXCELLENT** night time **HUNTERS**.

**LEOPARDS STAND ALMOST** two feet high at the **SHOULDERS**.

A big **MALE MAY MEASURE** nine **FEET LONG**.

It **CAN WEIGH** one hundred and sixty pounds.

A large **FEMALE** will weigh **ONLY** seventy pounds.

**LEOPARDS** have only a few **CUBS** in a litter.

**Psg: 42-EYE**

The eye is a most **IMPORTANT SENSE** organ.

We **USE** it to **VIEW** the **WORLD**.

**ALMOST EVERY ACTIVITY INVOLVES** the eyes.

**EYES** are **OUR** windows to the **WORLD**.

The **LENS** of the eye collects **LIGHT**.

The **LIGHT** is **FOCUSED INSIDE** the eye.

This information is sent to the **BRAIN**.

The brain then begins to **PROCESS** the **IMAGE**.

Eyes help us to enjoy **BOOKS** and **PAINTINGS**.

We **SEE** beauty in **MOUNTAINS** and **SUNSETS**.
Test Passage Pair 22 (Zipper/Egg)

Psg: 43-ZIPPER

A zipper is any kind of **SLIDE FASTENER**.

**ALL** zippers **HAVE** two rows of **TEETH**.

The two **EDGES** of the zipper fasten **TOGETHER**.

The **TEETH HOLD** the zipper **TOGETHER**.

The edges **STAY** fastened **TILL** they are **RELEASED**.

They are released **BY DRAWING** the slide back.

Slide zippers are **OFTEN** used to **FASTEN CLOTHING**.

They **ARE USED** on **LUGGAGE** and briefcases.

The **FIRST** zipper was invented by an **AMERICAN**.

It **WAS** made of connected **HOOKS** and eyes.

---

Psg: 44-EGG

Many kinds of animals and **BIRDS PRODUCE** eggs.

The **MAIN PURPOSE** of eggs is to breed **YOUNG**.

Most young **ANIMALS BEGIN** as an **EGG**.

**PEOPLE** usually think of the egg as a **FOOD**.

Actually, **FEW** kinds of eggs are **EATEN**.

Bird's eggs are **LARGER** than **MAMMAL'S**.

Their eggs **CONTAIN FOOD** for the young **BIRD**.

Young birds **DEVELOP OUTSIDE** the mother's **BODY**.

The ostrich **EGG** is the **LARGEST** type.

The **HUMAN EGG** is **ONE** of the smallest.
Test Passage Pair 23 (Clock/Kangaroo)

Psg: 44-CLOCK

Clocks are **INSTRUMENTS** that can **MEASURE** time.
They **DIVIDE** days into regular **INTERVALS**.
Originally, **TREE SHADOWS** were **USED** to mark time.
The **SHORTEST** shadows **OCCUR** around midday.
**LONGER** shadows occur in morning and **LATE AFTERNOON**.
The **FIRST** clock invented was the **SUNDIAL**.
**LATER**, the water clock was **DEVELOPED** in **CHINA**.
It could **MEASURE** time on **CLOUDY** days.
**WATER** clocks were used for several **THOUSAND YEARS**.
**EARLY GREEKS** and Romans **ALSO** used clocks.

Psg: 46-KANGAROO

The kangaroo **CARRIES** its **YOUNG** in a **POUCH**.
The pouch is **LOCATED** outside of the **ABDOMEN**.
**ANIMALS** with **POUCHES** are not found in **AMERICA**.
The kangaroo's **NATIVE COUNTRY** is **AUSTRALIA**.
There are many different kinds of **KANGAROOS**.
The **SMALLEST ARE** the same size as a **RABBIT**.
The largest **ARE NEARLY** seven feet tall.
Their back **LEGS** are larger than their **FRONT** legs.
Kangaroo fossils have **RECENTLY BEEN FOUND**.
Prehistoric kangaroos **GREW** to be **very LARGE**.
Test Passage Pair 24 (Camel/Goose)

Psg: 47-CAMEL

The camel is a very UGLY animal.
It is also ONE of the most USEFUL.
It has BEEN man’s SERVANT for MANY CENTURIES.
Camels were ONCE a measure of WEALTH.
In the BIBLE, God gave camels to ABRAHAM.
Camels are called the "SHIP of the desert".
They CAN endure long, HARD desert JOURNEYS.
Camels can TRAVEL many MILES without NEEDING water.
WITHOUT the camel, man COULDN'T TRAVEL the DESERTS.
Camel CARAVANS are STILL seen in the SAHARA.

Psg: 48-GOOSE

The goose is a WEB FOOTED BIRD.
It IS CLOSELY RELATED TO the DUCK.
A goose is larger than a DUCK.
Its NECK is slightly LONGER than a duck’s.
There are forty different varieties of GEESE.
Seventeen kinds of wild GEESE live in AMERICA.
GEESE ARE KNOWN to MOVE WITH the seasons.
They FLY NORTH in summer and south in WINTER.
Some fly as far north as the ARCTIC.
OTHERS fly as far south as MEXICO.
TEXT FOR CST PRACTICE PASSAGES

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### Psg: 1-LAKE--Practice Passage

Lakes are **BODIES** of water **SURROUNDED** by **LAND**.
They are **LOCATED** in **EVERY** large **COUNTRY**.
Some lakes are **FOUND** at **EXTREMELY** high altitudes.
Others are many feet **BELOW SEA** level.
**MOUNTAIN** lakes were **FORMED** by glaciers.
The **WORD** lake **MEANS** a large pond or **HOLE**.
The Caspian **SEA** is **REALLY** a lake.
**SOME** other well **KNOWN** seas are also lakes.
Lakes affect the weather for **MANY MILES AROUND**.
**PEOPLE USE** lakes for **RECREATION** and industry.

### Psg: 2-KNIFE--Practice Passage

The knife is a very **HELPFUL UTENSIL**.
It was a **TOOL** developed by the **CAVE** man.
He **SHARPENED** pieces of **STONE** to **MAKE** knives.
The knives were **USED** for **SKINNING** and **CUTTING** meat.
The knife **ALSO SERVES** as a **WEAPON**.
**MANY** different knives are used in **INDUSTRY** today.
**DIFFERENT** knives are used for **VARIOUS TASKS**.
The knife has **BEEN** used to **CREATE ARTWORK**.
**ARTISTS** use **KNIVES** to paint pictures.
These knives **CREATE** wide **SPLASHES** of color.
Psg: 3-CROW--Practice Passage

Crows are commonly seen wild birds.
They are known for their unusual call.
Crows are found all over the world.
Crows live in meadows and orchards.
They are large birds with black feathers.
During flight, the feathers look green.
Their powerful beak has a sharp point.
The beak is surrounded by feathers.
The crow's feet are adapted for walking.
Females are slightly smaller than males.

Psg: 4-KITE--Practice Passage

A kite is flown at the end of a string.
It is made of paper on a light frame.
Kites may be shaped like dragons or birds.
The kite was invented two thousand years ago.
Historians think the kite was invented in Greece.
The Chinese claim that they invented the kite.
They argue that it was used in wars.
In China a day is set aside as kite's day.
Kite's day falls on the seventh of July.
Thousands of Chinese fly kites on that day.
Psg: 5-GLUE--Practice Passage

Glue is a sticky material made from ANIMALS. It comes from their SKIN, bones, and TISSUES. The THREE TYPES of glue are forms of GELATIN. They are BONE, FISH, and hide glue. Glue IS USED to join different MATERIALS TOGETHER. These materials include WOOD, paper, and CLOTH. Bone glue is MADE by a STEAM process. FIRST, grease is removed FROM the BONES. A SOLUTION is used to DISSOLVE the GREASE. The CLEAN bones are BOILED to FORM glue.

Psg: 6-DOOR--Practice Passage

PEOPLE ENTER ROOMS through doors. A DOOR is also USED to COVER an entrance. A door may be HUNG on HINGES. It MAY SLIDE back and forth in a groove. There ARE DOORS that are DIVIDED into two parts. The COMMON name for this is a "dutch door". The UPPER half OPENS while the lower STAYS closed. THESE are POPULAR doors in EUROPEAN homes. The DESIGN provides SECURITY for the homeowner. It lets him SEE out, without LETTING ANYONE in.
Psg: 7-GRAPE--Practice Passage

The GRAPE is a fruit that GROWS on a vine.

PEOPLE have grown grapes throughout HISTORY.

They are MENTIONED in ANCIENT myths.

GRAPES are FOUND all over the WORLD.

They are EATEN, and made INTO WINE.

They are also MADE into grape JUICE.

DRIED grapes are called RAISINS.

Grape VINES are grown TO provide shade.

THREE THOUSAND KINDS of grapes EXIST.

ONE THOUSAND of THEM started in America.

Psg: 8-LIME-Practice Passage

Limes are CLOSELY related to the lemon.

They TASTE more SOUR THAN the lemon.

Lime SKIN is THICKER than the LEMON’S.

Limes GROW on SMALL CITRUS trees.

These trees GROW in MORE tropical AREAS.

The MAJORITY of limes are PRODUCED in Florida.

Lime trees GROW to be TEN feet TALL.

Limes are PRINCIPALLY used for making JUICE.

Lime juice is used to FLAVOR MANY DRINKS.

It is also used as a COOKING SPICE.
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Learning Passages

Psg: 1-WATCH--Learning Passage

Watches help us get to places on time.

A WATCH is REALLY a PORTABLE CLOCK.

A CENTURY ago watches were VERY EXPENSIVE.

Now, a RELIABLE WATCH CAN be BOUGHT CHEAPLY.

Watches are NOW INEXPENSIVE ENOUGH for CHILDREN.

Watches CARRIED by railroad ENGINEERS are very ACCURATE.

They make sure that trains run on time.

The EARLY watches were LARGE and HEAVY.

The first watch was INVENTED in the sixteenth CENTURY.

It was invented by a German LOCKSMITH.

Psg: 2-NOSE-Learning Passage

The nose is USED FOR BREATHING and SMELLING.

The nose and LUNGS have the SAME main FUNCTION.

AIR enters THROUGH TWO OPENINGS in the NOSE.

These are separated by a thin BONY WALL.

The air continues FROM the nose into the throat.

It THEN carries OXYGEN down to the LUNGS.

The nose also ALLOWS the detection of ODORS.

The sense of smell is CRITICAL to ANIMALS.

They USE it to identify THEIR ENEMIES.
Psg: 3-LEAVES--Learning Passage

Leaves are admired for their **BEAUTIFUL SHAPES**.
Their colors are brilliant in the **FALL**.
The **LEAF'S GREATEST** gift to mankind is **FOOD**.
Green **LEAVES** are **IMPORTANT** food **PRODUCERS**.
**PEOPLE WOULD STARVE** without leaves.
Their **FOOD** is **MANUFACTURED CONSTANTLY**.
An **INVISIBLE** process **GOES** on **INSIDE** every leaf.
Leaves **TRAP ENERGY** from **LIGHT** entering the plant.
The foods **PRODUCED** are **CALLED CARBOHYDRATES**.
**CARBOHYDRATES** are passed on to plant-eating animals.

Psg: 4-COTTON-Learning Passage

Cotton is the most important **SOURCE** of clothing.
Three out of four **PEOPLE** wear cotton clothing.
**COTTON** does **HAVE** many **USES BESIDES** clothing.
It is a chief source of many **CHEMICALS**.
It is **ALSO** used in **BUILDING** materials.
The cottonseed is rich in **OIL** and **MINERALS**.
It **ALSO** gives **FOOD** for **MEN** and **ANIMALS**.
**MILLIONS** of people **DEPEND** on money from **COTTON**.
**FARMER'S INCOMES DEPEND** on the **PRICE** of **COTTON**.
Cotton production can be important to economic **GROWTH**.
Psg: 5-DUCK--Learning Passage

Ducks are WEB FOOTED BIRDS.
They live ALONG lakes, streams, and RIVERS.
Seventy different KINDS of ducks LIVE in America.
Geese and SWANS are RELATED to DUCKS.
There ARE wild ducks and DOMESTIC ducks.
Wild ducks are prized by hunters.
When COOKED CORRECTLY, they ARE DELICIOUS to EAT.
Ducks HAVE large heads, and slender NECKS.
Their FLAT bills have tiny TEETH.
The BILLS ARE used to CATCH FOOD.

Psg: 6-WATER-Learning Passage

Water is EXTREMELY important in our LIVES.
Only AIR is MORE IMPORTANT than water.
Our BODIES are PRIMARILY MADE up of water.
WITHOUT water, people and ANIMALS would DIE.
Water IS NOT always easy to get.
Early PIONEERS had to SEARCH for water.
HOMESTEADS could not be BUILT without a WELL.
BATTLES have been FOUGHT for the possession of water.
LACK of water can CAUSE widespread SUFFERING.
Without water for CROPS, people may STARVE.
Psg: 7-ONION–Learning Passage

Onions BELONG to the LILY family.

They have a STRONG TASTE and DISTINCT odor.

The ODOR is due to a POWERFUL oil.

DURING peeling, the oil FORMS a vapor.

The vapor affects SENSITIVE NERVES in the EYES.

That is WHY people CHOPPING onions CRY.

Onions FIRST grew in CHINA.

THEY were RAISED in America by the pioneers.

Onions are MOSTLY GROWN in CALIFORNIA and Texas.

They are ALSO grown in COLORADO and New YORK.

Psg: 8-OAK-Learning Passage

The oak is a symbol of great STRENGTH.

There are TWO hundred DIFFERENT kinds of oaks.

Oaks grow in MANY DIFFERENT LANDS.

In Asia they grow WESTWARD from China.

They GROW in EUROPE from Sicily to SWEDEN.

They ARE EXTREMELY common in NORTH AMERICA.

The ACORN SETS the oak apart from other TREES.

The acorn IS the fruit of the OAK TREE.

It is surrounded by a HARD SHELL.

SQUIRRELS COLLECT acorns for their winter food SUPPLY.
A DIAMOND is the HARDEST substance KNOWN.
It is also ONE of the most VALUABLE.
It is the most WANTED of all PRECIOUS stones.
The DIAMOND is the JEWEL for engagement rings.
It is the MOST LASTING of all GEM stones.
Diamonds are ALSO used for CUTTING and GRINDING.
Diamonds are MADE of ALMOST PURE CARBON.
MOST diamonds have EIGHT sides.
OTHERS are SHAPED like a cube.
Some diamonds EVEN have TWELVE sides.

The legs are LONG LIMBS of the body.
They EXTEND DOWNWARD from the TRUNK to the FEET.
Legs are USED for BODY support and MOVEMENT.
Each leg CONSISTS of three LONG BONES.
THESE bones are surrounded by MUSCLE and TISSUE.
One leg SECTION is CALLED the THIGH.
The thighbone is the LONGEST BONE in the body.
The calf SECTION is BETWEEN the knee and ANKLE.
It CONTAINS the other TWO bones.
Psg: 11-ELM–Learning Passage

The elm is a **BEAUTIFUL**, large **SHADE** tree.

**ELM** trees are **COMMON** in **EUROPE** and **NORTH** America.
**THEY** have **BEEN KNOWN** to flourish in **AUSTRALIA**.
**SOME** elms are **SHAPED** like a **TALL** vase.
**OTHERS** take the **FORM** of an **UMBRELLA**.

Elm trees can **BECOME** **ONE** hundred feet **TALL**.
**SOME** elm **TREES** live for **TWO** hundred **YEARS**.
The elm's small **FLOWERS** appear in the **SPRING**.

Psg: 12-GORILLA–Learning Passage

The gorilla is the **LARGEST** of the **PRIMATES**.

It is the ape **THAT** most resembles **MAN**.
It is **ALSO** the rarest of the **APES**.
The gorilla lives in the **FORESTS** of **AFRICA**.
A gorilla is **USUALLY LARGER** than a man.
It is **NEARLY** six **FEET** tall standing **UPRIGHT**.
It **COULD EASILY** tear a man **APART**.
The gorilla is **COVERED** with coarse **BROWN HAIR**.
The gorilla's hair **BECOMES** **GRAY** with age.
Gorillas **SPEND** **MOST** days **HUNTING** for **FOOD**.
Psg: 13-DANDELION-Learning Passage

The dandelion is a yellow WILD FLOWER.
It grows EVERYWHERE in the SPRING.
Dandelions GROWING on LAWNS are CONSIDERED weeds.
The dandelion GROWS ALL over the WORLD.
THEY were BROUGHT to AMERICA by the early SETTLERS.
The name dandelion MEANS "lion's tooth".
The NAME COMES from the notches on the LEAVES.
The dandelion HAS a GOLDEN YELLOW head.
The HEAD is made of MANY flowers.
The HOLLOW STEM is filled with juice.

Psg: 14-DINOSAUR--Learning Passage

Dinosaurs LIVED millions of years ago.
These primitive creatures RULED THEIR world.
The WORD "DINOSAUR" MEANS "TERRIBLE LIZARD".
The NAME REFERRED to THEIR tremendous SIZE.
MOST dinosaurs were QUITE HARMLESS.
Dinosaurs are divided into TWO main groups.
Some dinosaurs ATE PLANTS, while others ate meat.
These two groups were not CLOSELY RELATED.
However, they were DESCENDED FROM the SAME ANCESTORS.
The dinosaurs DISAPPEARED many years ago.
Psg:15-OCEAN--Learning Passage

OCEANS cover the surface of OUR PLANET.
Ocean tides are DETERMINED by the full moon.
The power of the OCEAN is amazing.
It can be beautiful when it is CALM.
In THESE MOMENTS the ocean is like glass.
However, during a STORM it CAN be terrifying.
SOME WAVES are taller than an average BUILDING.
The OCEAN is a LARGE and LONELY PLACE.
You CAN SAIL for days WITHOUT SEEING PEOPLE.
Lifeboats HAVE FLOATED for months WITHOUT being found.

Psg: 16-KIDNEY-Learning Passage

Kidneys are very IMPORTANT organs.
The FUNCTION of the KIDNEYS is to CLEANSE the BLOOD.
They ACT as a FILTER to REMOVE WASTE.
The KIDNEYS are located IN the back.
There is one on EITHER side of the BACKBONE.
They are JUST BELOW the eleventh RIB.
The kidneys are ABOUT four inches LONG.
These organs are SHAPED like large BEANS.
The HOLLOW side of the BEAN faces INWARD.