

Name and surname: _____

Grade: _____ Date _____

Learning to calculate with the abacus



session
18

addition with the hands
units' column

1. Decipher the coded message

Solve the following operations using the abacus and discover the coded message.
Observe the example.

- | | | |
|---------------------------------------|---------------------------------------|-------------------------------------|
| Ⓐ $4-2+1 = \textcircled{3} = A$ | Ⓔ $2+5+2 = \textcircled{\quad} = Y$ | Ⓜ $2+1-1 = \textcircled{\quad} = T$ |
| Ⓑ $5+3-2-1 = \textcircled{\quad} = U$ | Ⓕ $4-2-1 = \textcircled{\quad} = C$ | Ⓝ $5+1 = \textcircled{\quad} = S$ |
| Ⓒ $5+2+1 = \textcircled{\quad} = I$ | Ⓖ $3-1-1 = \textcircled{\quad} = C$ | Ⓓ $5+3+1 = \textcircled{\quad} = Y$ |
| Ⓓ $1+1+2-1 = \textcircled{\quad} = A$ | Ⓙ $5+1+1-2 = \textcircled{\quad} = U$ | Ⓟ $3+1 = \textcircled{\quad} = L$ |
| Ⓔ $5+3-1 = \textcircled{\quad} = B$ | Ⓚ $2+2-1 = \textcircled{\quad} = A$ | Ⓠ $4-2+2 = \textcircled{\quad} = L$ |
| Ⓕ $5+3-5 = \textcircled{\quad} = A$ | Ⓛ $4-2-1-1 = \textcircled{\quad} = O$ | Ⓡ $4-3 = \textcircled{\quad} = C$ |



$\frac{\quad}{3} \frac{\quad}{7} \frac{\quad}{3} \frac{\quad}{1} \frac{\quad}{5} \frac{\quad}{6} \frac{S}{\quad}$ $\frac{\quad}{1} \frac{\quad}{3} \frac{\quad}{4} \frac{\quad}{1} \frac{\quad}{5} \frac{\quad}{4} \frac{\quad}{3} \frac{\quad}{2} \frac{ON}{8} \frac{\quad}{0}$



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addition and subtractions with the abacus
units' column

2. Decipher the coded message

Solve the following operations using the abacus and discover the coded message.
Observe the example.

(A) 	(B) 	(C) 	(D) 	(E) 	(F) 
2 -1 2	5 4 -2	1 5 2 1	1 2 -3	5 2 2 -1	1 5 3 -2
(3) = L	() = N	() = H	() = A	() = S	() = N

(G) 	(H) 	(I) 	(J) 	(K) 	(L) 
4 -2 -1	5 2 1	4 -1 -2 -1	5 3 -1 -1	1 2 -3 4	5 2 -5
() = F	() = S	() = A	() = R	() = D	() = C



L
1 3 0 8 9 2 0 6 4 8



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units' column



3. Decipher the coded message

Solve the following operations using the abacus and discover the coded message.
Observe the example.

- Ⓐ $2+2-2 = \bigcirc = A$ Ⓔ $5+1+3 = \bigcirc = T$ Ⓛ $3-2+1 = \bigcirc = A$
Ⓑ $5+4 = \bigcirc = T$ Ⓧ $1+5+1+1 = \bigcirc = B$ Ⓝ $3+1-1 = \bigcirc = U$
Ⓒ $1+3-3 = \bigcirc = D$ Ⓞ $4-4+1 = \bigcirc = D$ Ⓚ $2+2-2+5 = \bigcirc = \&$
Ⓓ $5+2+2-5 = \bigcirc = C$ Ⓢ $1+5-1 = \bigcirc = S$ Ⓛ $5+2-1 = \bigcirc = R$



$\overline{2} \overline{1} \overline{1}$ $\overline{7}$ $\overline{5} \overline{3} \overline{8} \overline{9} \overline{6} \overline{2} \overline{4} \overline{9}$

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4. Decipher the coded message

Solve the following operations using the abacus and discover the coded message. Observe the example.

(A)

$$\begin{array}{r} 5 \\ 1 \\ 2 \\ -3 \\ \hline \end{array}$$

○ = T

(B)

$$\begin{array}{r} 2 \\ 2 \\ -2 \\ \hline \end{array}$$

○ = S

(C)

$$\begin{array}{r} 1 \\ 3 \\ -1 \\ \hline \end{array}$$

○ = R

(D)

$$\begin{array}{r} 3 \\ 5 \\ -2 \\ 3 \\ \hline \end{array}$$

○ = D

(E)

$$\begin{array}{r} 3 \\ -2 \\ 1 \\ \hline \end{array}$$

○ = S

(F)

$$\begin{array}{r} 4 \\ -1 \\ 5 \\ \hline \end{array}$$

○ = U

(G)

$$\begin{array}{r} 3 \\ 5 \\ -2 \\ \hline \end{array}$$

○ = E

(H)

$$\begin{array}{r} 5 \\ 3 \\ 1 \\ -5 \\ \hline \end{array}$$

○ = O

(I)

$$\begin{array}{r} 3 \\ 1 \\ -2 \\ -2 \\ \hline \end{array}$$

○ = C

(J)

$$\begin{array}{r} 4 \\ -2 \\ -1 \\ \hline \end{array}$$

① = L



$$\begin{array}{ccccccc} & & & & L & & \\ \hline 3 & 6 & 2 & 8 & 1 & 5 & 2 \end{array}$$



TEACHER'S VERSION

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units' column



1. Decipher the coded message

Solve the following operations using the abacus and discover the coded message.
Observe the example.

- | | | |
|-----------------|-----------------|---------------|
| Ⓐ $4-2+1=3=A$ | Ⓔ $2+5+2=9=Y$ | Ⓜ $2+1-1=2=T$ |
| Ⓑ $5+3-2-1=5=U$ | Ⓕ $4-2-1=1=C$ | Ⓝ $5+1=6=S$ |
| Ⓒ $5+2+1=8=I$ | Ⓖ $3-1-1=1=C$ | Ⓓ $5+3+1=9=Y$ |
| Ⓓ $1+1+2-1=3=A$ | Ⓖ $5+1+1-2=5=U$ | Ⓟ $3+1=4=L$ |
| Ⓔ $5+3-1=7=B$ | Ⓚ $2+2-1=3=A$ | Ⓖ $4-2+2=4=L$ |
| Ⓕ $5+3-5=3=A$ | Ⓛ $4-2-1-1=0=O$ | Ⓡ $4-3=1=C$ |



<u>A</u>	<u>B</u>	<u>A</u>	<u>C</u>	<u>U</u>	<u>S</u>	<u>C</u>	<u>A</u>	<u>L</u>	<u>C</u>	<u>U</u>	<u>L</u>	<u>A</u>	<u>T</u>	<u>I</u>	<u>O</u>	<u>N</u>
3	7	3	1	5	6	1	3	4	1	5	4	3	2	8	0	



To solve the exercises you can also check:

Practice sheets



Theory practice sheets
from sessions 4 and 10

videos



"The Abacus: Beads movement I"
and "The Beads movement II"

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2. Decipher the coded message

Solve the following operations using the abacus and discover the coded message.
Observe the example.

(A) 	(B) 	(C) 	(D) 	(E) 	(F) 
2	5	1	1	5	1
-1	4	5	2	2	5
2	-2	2	-3	2	3
(3) = L	(7) = N	(9) = H	(0) = A	(8) = S	(7) = N
(G) 	(H) 	(I) 	(J) 	(K) 	(L) 
4	5	4	5	1	5
-2	2	-1	3	2	2
-1	1	-2	-1	-3	2
(1) = F	(8) = S	(0) = A	(6) = R	(4) = D	(2) = C

F L A S H C A R D S
1 3 0 8 9 2 0 6 4 8

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units' column



3. Decipher the coded message

Solve the following operations using the abacus and discover the coded message.
Observe the example.

- (A) $2+2-2=$ (2) =A (E) $5+1+3=$ (9) =T (I) $3-2+1=$ (2) =A
(B) $5+4=$ (9) =T (F) $1+5+1+1=$ (8) =B (J) $3+1-1=$ (3) =U
(C) $1+3-3=$ (1) =D (G) $4-4+1=$ (1) =D (K) $2+2-2+5=$ (7) =&
(D) $5+2+2-5=$ (4) =C (H) $1+5-1=$ (5) =S (L) $5+2-1=$ (6) =R



$\frac{A}{2} \frac{D}{1} \frac{D}{1}$ $\frac{\&}{5}$ $\frac{S}{5} \frac{U}{3} \frac{B}{8} \frac{T}{9} \frac{R}{6} \frac{A}{2} \frac{C}{4} \frac{T}{9}$

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4. Decipher the coded message

Solve the following operations using the abacus and discover the coded message.
Observe the example.

(A)	(B)	(C)	(D)	(E)
5			3	
1	2	1	5	3
2	2	3	-2	-2
-3	-2	-1	3	1
5 = T	2 = S	3 = R	9 = D	7 = A
(F)	(G)	(H)	(I)	(J)
4	3	5	3	
-1	5	3	1	4
5	-2	1	-2	-2
		-5	-2	-1
8 = U	6 = E	4 = O	0 = C	1 = L



R E S U L T S
3 6 2 8 1 5 7



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