学校設定科目

iC アカデミックイングリッシュ

抜粋版

岡山県立岡山一宮高等学校

iCAE: 05

Today's class aim

To learn cell biology in English

Find the differences between plant and animal cells

Which two parts do **only** plant cells have?
Write in the blanks, and find their Japanese name from a dictionary.

English name	Japanese name

Find and write down new words for you (from "Vocabulary in context")

English	日本語	English	日本語

Read "Vocabulary in context" and answer following questions in 日本語.

1. What one part do all cells have?
2. What does the cell membrane do?
3. What do ribosomes do?
4. What do lysosomes do?

Read any part on pages (p.24-p.25) and make notes on information you caught from the sentences.

English / 日本語 (List at least **3** facts)

Things done well / you learned / you felt tough	Questions you have

Completion rate of class aim: Poor ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ Perfect

Comment:

Class: Num: Name:

iCAE: 06

Today's class aim

To learn mechanics in English

Fill blanks with proper words

The rate at which a moving object moves is called (1).
(1) with direction that the object has is called (2), expressed in meters per second.
The rate of change of (2) of a moving object expressed in meters per second squared is (3).

English	日本語
1.	
2.	
3.	

Find and write down new words for you (from "Vocabulary in context")

English	日本語	English	日本語

Read "Vocabulary in context" and answer following questions in 日本語.

1. What makes objects move?
2. What makes the object difficult to change its speed or direction of moving?
3. What are the names of forces always happen in pairs?

Read any part on p.192-p.193 and make notes on information you caught from the sentences.

English / 日本語 (List at least **3** facts)

Things done well / you learned / you felt tough	Questions you have

Completion rate of class aim: Poor ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ Perfect

Comment:

Class: Num: Name:

iCAE: 09

Today's class aim

To learn about Bacteria in English

Answer the questions

1. A microscopic organism consisting of a single cell and a simple structure is called ( )
2. Bacterium does not contain ( )
3. Bacteria in our guts help us to do what?

English	日本語
1.	
2.	
3.	

Find and write down new words for you (from "3rd and 4th paragraphs")

English	日本語	English	日本語

Read the 3rd and 4th paragraphs and answer following questions in 日本語.

1. Mention one important role of bacteria in the environment.
2. Vaccination can help protect against bacterial infection such as?
3. Give two serious diseases cause by bacteria.

Read any part of the page and make notes on information you caught from the sentences.

日本語 (List at least **3** facts)

Things done well / you learned / you felt tough	Questions you have

Completion rate of class aim: Poor ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ Perfect

Comment:

Class: No.: Name:

iCAE: 13

Today's class aim

To know what a research paper is

What is a "research paper"?

4 reasons that you need to read research papers

1. 自分の考えと

2. _____がないか把握する。

3. 使える_____がないか調べる。

4. (自分のトピックが)まだ_____ことを知る。

Structure of a research paper

EN Title	JP	Memo
Author(s) Affiliation(s)		
Abstract		
Introduction		
Methods		
Results		
Discussion		
Conclusion		
References		

Structure of a research paper you found

日本語論文

タイトル ⇨

English paper

Title ⇨

Things done well / you learned / you felt tough	Questions you have

Completion rate of class aim: Poor ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ Perfect

Comment:

Class: No.: Name: _____

iCAE: 16

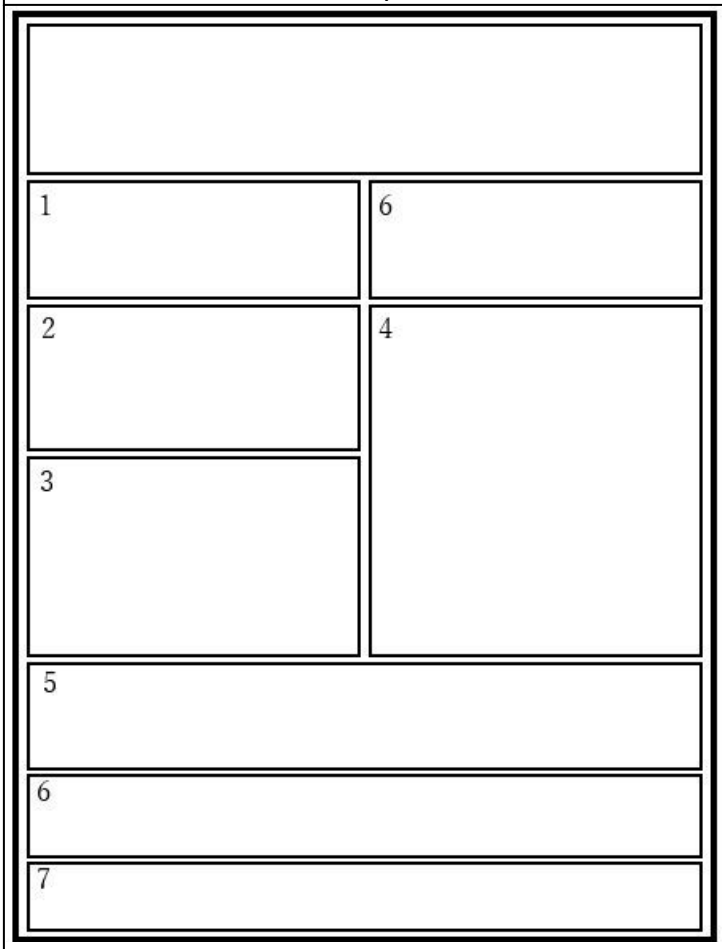
Today's class aim

To know what a research poster is

What is a research poster?

( ) information or research concisely and attractively to help generate ( ).
The poster is usually a ( ) of a brief ( ) mixed with ( ), ( ), ( ), and other presentation formats.

Contents and structure of a poster



memo:

Team# and a paper you chose

number:	title:

Things done well / you learned / you felt tough	Questions you have

Completion rate of class aim: Poor ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ Perfect

Comment:

Class: No.: Name:

iCAE: 25

Today's class aim

To know how to read mathematical expressions, units and substances

Can you say them in English? "Verbalization of the equations"

$1 + 2 = 3$ _____

$1 - 1 = 0$ _____

$2 \times 5 = 10$ _____

$1 / 2 =$? _____

Decimals		Fractions	
JP		JP	
9.8	_____	$\frac{2}{3}$	_____
3.1415	_____	$\frac{1}{4}$	_____
memo		$\frac{4}{5}$	_____

Large numbers

2023	_____	10^6	_____
1900	_____	10^9	_____
memo		10^{12}	_____

Mathematical expressions

$y=ax^2+bx+c$ y _____ ax _____ _____bx _____ c

$x=\frac{-b \pm \sqrt{b^2-4ac}}{2a}$ x _____ _____ b _____

_____ b_____

_____ four ac _____

_____ two a

Things done well / you learned / you felt tough	Questions you have

Completion rate of class aim: Poor ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ Perfect

Comment:

Class: No.: Name: _____

Mathematical symbols

Description	Notation	Example	Reads
Equality	=	$a = b$	"a equals b"
Addition	+	$a + b$	"a plus b" "the sum of a and b"
Subtraction	-	$a - b$	"a minus b" "the difference of a and b"
Plus/Minus	±	$a \pm b$	"a plus or minus b"
Multiplication	× ·	$a \times b$ $a \cdot b$	"a times b" "the product of a and b"
Division	/	a / b $\frac{a}{b}$	"a divided by b" "the quotient of a and b"
Inverse	$\square^{-1}$	a^{-1} $\frac{1}{a}$	"the inverse of a" "a inverse"
Unary Minus	-□	$-a$	"negative a" "minus a"
Root	$\sqrt{\square}$	$\sqrt{a}$	"the square root of a"
	$\sqrt{\square}$	$\sqrt[3]{a}$	"the cube (cubic) root of a"
	$\sqrt{\square}$	$\sqrt[n]{a}$	"the nth root of a"
Exponential	^	x^2	"x squared"
		x^3	"x cubed"
		x^a	"x to the ath" "x to the power of a"
Absolute Value	|□|	$\|a\|$	"the absolute value of a"
Percentage	%	10%	"10 percent"
Function	( )	$f(x)$	"f of x"
Inequality	≠	$a \neq b$	"a is not equal to b"
Approximately Equal	≈	$\pi \approx 3.14$	"pi is approximately equal to 3.14"
Identity	≡	$a+0 \equiv a$	"a plus zero is equivalent to a"
Proportional To	∝	$cx \propto x$	"cx is proportional to x"
Summation	$\sum_{\square}^{\square}$	$\sum_{i=1}^{n} a_i$	"the sum of ai from i equals 1 to n"
Product	$\prod_{\square}^{\square}$	$\prod_{i=1}^{n} z_i$	"the product of zi from i equals 1 to n"
Derivative	' or d	$\frac{df}{dx}$	"the derivative of f with respect to x" "d f d x" "d d x of f"
Partial Derivative	∂	$\int x$	"the partial of f with respect to x" "partial f partial x"
Parenthesis	( )		
Bracket	[ ]		

Description	Notation	Example	Reads
Antiderivative	$\int$	$\int x dx$	"the integral of x, d x"
Definite Integral	$\int_{\square}^{\square}$	$\int_a^b x dx$	"the integral of x, d x from a to b"
Line Integral (Curve Integral)	$\oint$	$\oint_C f(x,y) ds$	"the line (curve) integral of f d s along C"
Goes To	→	$x \to 0$	"x goes to zero "
Infinity	∞	$a \to \infty$	"a goes to infinity"
Limit	$\lim_{\square \to \square}$ (□)	$\lim_{x \to 0} f(x)$	"the limit as x goes to 0 of f of x"
Less Than	<	$a < b$	"a is less than b"
Greater Than	>	$c > b$	"c is greater than b"
Less Than or Equal To	≤	$f(x) \leq 5$	"f(x) is less than or equal to 5"
Greater Than or Equal To	≥	$f(x) \geq f(y)$	"f(x) is greater than or equal to f(y)"
Factorial	!	$n!$	"n factorial"
Line Segment	▭	~~AB~~	"the line segment AB"
Angle	∠	∠EDF	"the angle EDF"
Logarithm	$\log_a x$	$y = \log_a x$	"y equals the log of x, base a" "y equals the log, base a, of x"
Ratio	:	$a:b = c:d$	"a is to b as c is to d" "The ratio of a to b is equal to the ratio of c to d"

memo

Today's class aim

To know how to read units, the name of elements and substances.

SI units

SI units:

Physical quantities	Derived units
Time	m/s .....
second(s)	.....
minute(s)	km/h .....
hour(s)	.....
day(s)	m/s^2 .....
week(s)	.....
month(s)	Hz .....
year(s)	.....
decade(s)	J .....
century(ies)	.....

memo

Things done well / you learned / you felt tough	Questions you have

Completion rate of class aim: Poor ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ Perfect

Comment:

Class: No.: Name:

SI units and prefixes

Basic SI Units

m	meter(s)
kg	kilogram(s)
s	second(s)
A	ampere(s)
K	kelvin(s)
^{o}C	degree(s) celsius, centigrade(s)
cd	candela(s)
mol	mole(s)

Derived Units

m/s	meter(s) per second
km/h	kilometer(s) per hour
m/s^2	meter(s) per second squared
J	joule(s)
Hz	hertz

Prefix

deca	10^{1}	deci	10^{-1}
hecto	10^{2}	centi	10^{-2}
kilo	10^{3}	milli	10^{-3}
mega	10^{6}	micro	10^{-6}
giga	10^{9}	nano	10^{-9}
tera	10^{12}	pico	10^{-12}
peta	10^{15}	femto	10^{-15}
exa	10^{18}	atto	10^{-18}
zetta	10^{21}	zepto	10^{-21}
yotta	10^{24}	yocto	10^{-24}
ronna	10^{27}	ronto	10^{-27}
quetta	10^{30}	quecto	10^{-30}

Name of substances

Name	Symbol	Atomic#	Name	Symbol	Atomic#	Name	Symbol	Atomic#
Hydrogen	H	1	Niobium	Nb	41	Thallium	Tl	81
Helium	He	2	Molybdenum	Mo	42	Lead	Pb	82
Lithium	Li	3	Technetium	Tc	43	Bismuth	Bi	83
Beryllium	Be	4	Ruthenium	Ru	44	Polonium	Po	84
Boron	B	5	Rhodium	Rh	45	Astatine	At	85
Carbon	C	6	Palladium	Pd	46	Radon	Rn	86
Nitrogen	N	7	Silver	Ag	47	Francium	Fr	87
Oxygen	O	8	Cadmium	Cd	48	Radium	Ra	88
Fluorine	F	9	Indium	In	49	Actinium	Ac	89
Neon	Ne	10	Tin	Sn	50	Thorium	Th	90
Sodium	Na	11	Antimony	Sb	51	Protactinium	Pa	91
Magnesium	Mg	12	Tellurium	Te	52	Uranium	U	92
Aluminium	Al	13	Iodine	I	53	Neptunium	Np	93
Silicon	Si	14	Xenon	Xe	54	Plutonium	Pu	94
Phosphorus	P	15	Cesium	Cs	55	Americium	Am	95
Sulfur	S	16	Barium	Ba	56	Curium	Cm	96
Chlorine	Cl	17	Lanthanum	La	57	Berkelium	Bk	97
Argon	Ar	18	Cerium	Ce	58	Californium	Cf	98
Potassium	K	19	Praseodymium	Pr	59	Einsteinium	Es	99
Calcium	Ca	20	Neodymium	Nd	60	Fermium	Fm	100
Scandium	Sc	21	Promethium	Pm	61	Mendelevium	Md	101
Titanium	Ti	22	Samarium	Sm	62	Nobelium	No	102
Vanadium	V	23	Europium	Eu	63	Lawrencium	Lr	103
Chromium	Cr	24	Gadolinium	Gd	64	Rutherfordium	Rf	104
Manganese	Mn	25	Terbium	Tb	65	Dubnium	Db	105
Iron	Fe	26	Dysprosium	Dy	66	Seaborgium	Sg	106
Cobalt	Co	27	Holmium	Ho	67	Bohrium	Bh	107
Nickel	Ni	28	Erbium	Er	68	Hassium	Hs	108
Copper	Cu	29	Thulium	Tm	69	Meitnerium	Mt	109
Zinc	Zn	30	Ytterbium	Yb	70	Darmstadtium	Ds	110
Gallium	Ga	31	Lutetium	Lu	71	Roentgenium	Rg	111
Germanium	Ge	32	Hafnium	Hf	72	Copernicium	Cn	112
Arsenic	As	33	Tantalum	Ta	73	Nihonium	Nh	113
Selenium	Se	34	Tungsten	W	74	Flerovium	Fl	114
Bromine	Br	35	Rhenium	Re	75	Moscovium	Mc	115
Krypton	Kr	36	Osmium	Os	76	Livermorium	Lv	116
Rubidium	Rb	37	Iridium	Ir	77	Tennessine	Ts	117
Strontium	Sr	38	Platinum	Pt	78	Oganesson	Og	118
Yttrium	Y	39	Gold	Au	79			
Zirconium	Zr	40	Mercury	Hg	80			

memo:

iCAE: 28

Today's class aim
To know how to find a paper as a reference of your research project

Main topic (question, problem, complaint, idea etc…)

Which area of science match to your topic?

Keywords to search

Title of paper	Rating

Things done well / you learned / you felt tough	Questions you have

Completion rate of class aim: Poor ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ Perfect

Comment:

Team:

Class: No.: Name: