

3

English for Mechanical Engineers

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INVESTICE DO VZDĚLÁNÍ

English for Mechanical Engineers 3

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Plzeň 2013

Introduction to English for Mechanical Engineers 3

The textbook English for Mechanical Engineers 3 was written as a part of a project called Innovation of the Language Education at the University of West Bohemia, which was financed by the Operational Programmes Education for Competitiveness. It was the project Nr. CZ.1.07/2.2.00/15.0403.

The textbook consisting of 4 parts (English for Mechanical Engineers 3, English for Mechanical Engineers 4, English for Mechanical Engineers 5 and English for Mechanical Engineers 6) is designed for young adults who want to learn to communicate effectively in situations relating to their future jobs. The students of Mechanical Engineering need to develop their English skills to be able to communicate in an international workplace. The course is aimed at students who completed at least A1 (speaking and writing) A2 (reading and listening) level of English according to CEFR during their previous studies. The textbook is based on the communicative approach; speaking, listening, reading and writing are given equal importance. There is a strong focus on functional language and functional grammar.

English for Mechanical Engineers 3 provides approximately 23 hours of teaching material which include 6 units. The units are clearly divided into lesson sequences bringing interesting reading and listening passages which present key words in context. There are many opportunities for discussion and pair or group activities and a variety of grammar revision exercises which can be used for self-study or in the classroom. The first textbook offers topics such as giving information about students' study, writing simple emails, making simple phone calls and leaving messages, giving directions, giving simple instructions, explaining functions, describing shapes and solving problems.

The textbook is equipped with vocabulary lists, a grammar bank and scripts of the recordings. The material has been extensively piloted in the classroom.

Acknowledgement

We would like to express our appreciation to all those who contributed to the successful completion of this project:

to Joan DeForeest for proofreading, to our colleagues who did the recordings and last but not least to our colleagues who piloted the textbook for sharing their valuable teaching experience with us and for providing the feedback.

The authors



INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

English for Mechanical Engineers 3

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UNIT 1 - International Student

A New Student in a Class

Warmer

Imagine there is a new international student in the class. Your teacher asked him/her to introduce himself/herself. Read the text and complete the tasks below.



Hello. My name is Pablo Rivera. I'm from Spain and I speak Spanish, French and English. I study at the University of Vigo, my field of study is Mechanical Engineering and my programme focuses on machine design. My favourite subject is Machine Construction because I like making my ideas real. At the moment, I'm improving the design of a hydraulic press.

1. In the text above, underline all verbs in Present Simple and Present Continuous tense. Explain the difference.

Present Simple

Present Continuous

2. Complete the sentences with the correct form of the verb in brackets. Use Present Simple or Present Continuous.

- a) Kate _____ (be) not here at the moment. She _____ (have) lunch with her classmate.
- b) How long _____ it _____ (take) you to get to school in the morning?
- c) _____ you often _____ (forget) your homework?
- d) Why _____ you _____ (not work)? I can't. The computer is broken. I _____ (wait) for the serviceman.
- e) Who _____ you _____ (wait) here for? The exam committee. They _____ (decide) whether I failed or passed the exam.
- f) Peter _____ (study) at the Faculty of Mechanical Engineering and this year he _____ (work) on a special project in a team of four people.

3. Are there any foreign students at your faculty/dormitory? Where are they from? Which languages do they speak?

What is the difference?

China x Chinese

Denmark x Dane x Danish

Look at these sentences. They may help you:

My father is from *China*. He speaks *Chinese* and loves *Chinese* food.

Carl is a half-*Dane*. He has a *Danish* mother and a *Czech* father. They all live in *Denmark*.

4. Read this letter from the Rector of Roskilde University. Find the names of countries, languages and people living there. Complete the first part of the table below.



Dear student,

You have decided to spend this academic year at Roskilde University, an institution with a great tradition. We are glad to have you here and hope you will benefit from our study programmes and the life on campus.

Every year, students from all over the world come to Denmark. Roskilde University is especially famous for its intercultural aspect. Most foreign students come from Germany, Italy, Greece and France; however, students from China and South Korea are very frequent participants, too. You will have a unique opportunity to make friends from all over the world. You could even learn Chinese, Korean or some other language!

Our lecturers, mostly Danes, are highly skilled professionals with years of experience. All of them are respected outside Denmark as well. Roskilde University has made a name for itself in the US, Sweden, Bulgaria, Poland and even India.

We welcome you as a Czech representative to our intercultural family. We look forward to learning something about the Czech Republic and its culture.

Best wishes,

Andreas Hansen

Country	Language	Adjective	People
<i>Denmark</i>	<i>Danish</i>	<i>Danish</i>	<i>* He's a Dane. He's Danish.</i>
<i>Germany</i>	<i>German</i>	<i>German</i>	<i>German</i>
I			
G			
F			
C			
S			
the U			
S			*
B			
P			*
I			
the C			
E			
			A
			A
			B
		F	
M			
	S		*
	J		
	P		
	P		

5. Read this blog post. Circle the correct option in each sentence. Complete the second part of the table above.



19 September 2012, 17:29, posted by Lucka

Hey guys! It's just awesome here in ***Dane / Denmark / Danish!*** I want to share some pics of my new friends. Most of them are from ***Europe / European*** but some are ***Asian / Asia*** or ***Africa / African***, too. Well, Mandy is from the UK, so she's ***British / Britain***. I share a room with her and Simone, a ***France / French*** girl. They both know a lot about the ***Czech Republic / Czech***. That's so cool. And then, Pedro, a guy from ***Mexican / Mexico***. His ***Spain / Spanish*** is rather funny but I like that. Pedro shares a room with Karl, a ***German / Germany*** guy. Karl is unbelievable. He can speak ***Japan / Japanese, Portugal / Portuguese*** and even ***Pole / Polish / Poland!*** And finally, our buddies Helle and Sanjeev. Helle is ***Danish / Denmark*** but Sanjeev is from ***India / Indian***. They are a really cute couple!

6. Role play. You are an international student in a language class. Have a look at the card with your new identity. Introduce yourself to your classmates.

Timetable

Warmer

Look at these words. Are they familiar to you? Look them up in a dictionary.

lecture

lab

seminar

lecturer

attendance

break (noun)



1. Discuss these questions with your partner:

- How many hours do you spend at school every week?
- Where do your lessons take place? (laboratories, computer rooms,...)
- What time do you usually start in the morning?

2. Pavel and Hans are discussing their timetables. Listen to their conversation and complete the tasks below.



a) Listen and mark the times their classes start (→) and end (←).

b) Listen again and write the names of their subjects.

When can they have lunch together? on _____ from – to _____

<u>PAVEL</u>	7:30	8:25	9:20	10:15	11:10	12:05	13:00	13:55	14:50	15:45	16:40	17:35	18:30	19:25
Monday														
Tuesday														
Wednesday														
Thursday														
Friday														

<u>HANS</u>	7:30	8:25	9:20	10:15	11:10	12:05	13:00	13:55	14:50	15:45	16:40	17:35	18:30	19:25
Monday														
Tuesday														
Wednesday														
Thursday														
Friday														

Prepositions of time: IN, AT, ON

ON days special days dates	on Monday, on Tuesday on New Year's Eve on Easter Monday on March 15 on the 1 st of July
AT periods of time specific time	at Easter at Christmas at 5 pm, at half past two at night, at the weekend
IN months seasons years parts of the day	in June in summer in 1838 in the 20 th century in the 1980's in the afternoon in the morning



One day **in** summer I woke up
on Monday **at** 9 o'clock...
 ...And it was too late.

3. Complete the short text below with the correct prepositions: in, at, on.

The winter semester usually starts ____ September. The first lectures and seminars take place ____ Monday morning ____ 7:30 am. Most students, however, prefer to sleep ____ the morning. Luckily there are classes ____ the afternoon and ____ the evening as well. The school is only closed ____ night. Students go back home for Christmas ____ the end of December. The campus is completely deserted ____ Christmas. The study period starts ____ the first workday after New Year's Eve. After that, the summer semester starts ____ February.

Which other prepositions of time do you know?

4. What are your subjects at school? Write at least four names of subjects of your study programme.

5. Match the expressions in column A to expressions in column B and form the names of some subjects studied at the Faculty of Mechanical Engineering.

A	B	A	B
Manufacturing	Support	Machine	Engineering
Mechanics of	Processes	Industrial	Materials
Mechanical	Engineering	Metal forming,	Science
Engineering	Materials	Materials	Casting and Welding
Computing	Design	Engineering	Components and Mechanisms

6. Match the names of subjects with their definitions.

Mathematics	The area of mathematics relating to the study of space and the relationships between points, lines, curves, and surfaces <small>Definition from: Cambridge Dictionaries Online, (2011a)</small>
Physics	The branch of science that deals with the dynamics of fluids, especially incompressible fluids in motion <small>The Free Dictionary by Farlex (2011a)</small>
Mechanics	The study of numbers, shapes, and space using reason and usually a special system of symbols and rules for organizing them <small>Definition from: Cambridge Dictionaries Online, (2011b)</small>
Geometry	Branch of physics that is concerned with the analysis of the action of forces on matter or material systems <small>Definition from: The Free Dictionary by Farlex (2011b)</small>
Thermodynamics	The scientific study of matter and energy and the effect that they have on each other <small>Definition from: Cambridge Dictionaries Online, (2011c)</small>
Hydrodynamics	The area of physics connected with the action of heat and other types of energy, and the relationship between them <small>Definition from: Cambridge Dictionaries Online, (2011d)</small>

7. Pairwork

Have a look at your timetable and tell your partner when your classes start, when you have free time and what your subjects are. Then note down the details of your partner's timetable.

	7:30	8:25	9:20	10:15	11:10	12:05	13:00	13:55	14:50	15:45	16:40	17:35	18:30	19:25
Monday														
Tuesday														
Wednesday														
Thursday														
Friday														

8. For the next year you want to study at the University of Antwerp. Here is the application form you have to fill in and submit. Fill in all the required information. Search the internet for unknown vocabulary.



Please use black
ink and print

International Relations Office, University of Antwerp - City campus, Gratiekapelstraat 10, BE-2000 Antwerpen
tel: +32 3 265 49 61 - fax: +32 3 265 41 42 - international@ua.ac.be - www.ua.ac.be/internationalexchange

**Application form for admission as exchange student at the
University of Antwerp - academic year 20 _____**

*Please return the original application forms, completed and signed,
with 1 picture to: Ms. Eva Vervecken, International Relations Office,
University of Antwerp, City campus, Gratiekapelstraat 10, BE-2000
Antwerpen, Belgium*

photo

by June 15, 20__ (November 15, 20__ for 2nd semester students)



INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

Student's personal data

Family name(s): First name(s):

Gender: ☐ M (male) ☐ F (female) Nationality:

Date and place of birth:

Current address (valid until: / /):

..... Country:

Phone: E-mail:

Permanent address:

..... Country:

Phone:

Person to be contacted in case of emergency:

Address:

..... Country:

Phone: E-mail:

Study data

Home university:

City: Country:

Department/Faculty:

Field of study:

Specialisation:

Year of study prior to departure:

Please attach a transcript of records listing all courses (and marks) of the past and present study years.

- Period of stay:
- ☐ 1st semester (September – February)
- ☐ 2nd semester (February – July)
- ☐ Full academic year (September – July)

Number of months (if different):

Estimated date of arrival:

Department/Faculty at UA:

Please complete the "Learning Agreement" (separate form).

Language proficiency

Native language:

Other languages – please indicate appropriate language levels (A1, A2, B1, B2, C1, C2) according to CERF. (please find the self-assessment grid on:

<http://europass.cedefop.europa.eu/en/resources/european-language-levels-cefr>)

	Reading	Speaking	Comprehension	Writing
Dutch				
English				

All students are expected to attend the **Orientation Days** for exchange students at the beginning of the semester

(23 & 24 September 20__ for the 1st term – 10 & 11 February 20__ for the 2nd term)

All information necessary for the preparation of your stay at UA is available on our website: <http://www.ua.ac.be/internationalexchange>.

This registration includes insurance against accidents and third party liability during educational and recreational activities at the University of Antwerp.

Date:

Signature of student:

Briefly state your preferences, likes and dislikes regarding your study programme. Do not forget to mention the subjects you like and why. Write about 150 words.

Adapted from: IASTED, (2011)

UNIT 2 – Telephoning and Emails

Telephoning

Warmer

Do a little survey among two or three of your classmates: ask questions and complete the chart below.



Ask about:	Name 1:	Name 2:	Name 3:
prefer/making phone calls or sending SMS/why Q: _____?			
number of phone calls in one day/who to Q: _____?			
number of text messages in one month/who to Q: _____?			
person he/she calls/texts most often Q: _____?			
a landline* at home Q: _____?			

*pevná linka



1. You are going to listen to three short telephone conversations. Answer the questions below.

- Where is Natalie? _____
- Why does Phil leave his phone number? _____
- Who gives Phil's phone number to Natalie? _____
- Who does Carl need to talk to? _____
- Who puts Carl through? _____
- Why does the meeting have to be cancelled? _____
- Where is Pavel now? _____
- What is Martin doing in Kenya? _____



2. Now listen again and fill in the gaps in each dialogue.

Conversation A

W: woman

P: Phil

W: Hello?

P: Hi, this is Phil Sanders. _____ Natalie there?

W: I'm _____ she's not here at the moment. She's got her dancing class. Do you want to _____ a message?

P: Well, yes...ehm...could you tell her to call me back _____ possible? It's very important.

W: Sure. Does she have your _____ ?

P: I think she does... but, just in case, it's _____.

W: Sorry, can you _____ that?

P: Sure. It's _____.

W: Right. I'll give her your message.

P: Thanks. Bye.

W: You're _____. Bye.

Conversation B

S: Samantha

CJ: Carl Jung

C: Clark

S: Iron Bridge Ltd, Samantha _____. How can I help you?

CJ: Hi, this is Carl Jung from Eisen Brücke GmbH. Could I speak to Mr. Jason Clark, _____?

S: Of course. I'll _____ you _____.

(music)

C: Clark speaking.

CJ: Ah, hi Jason. This is Carl. I'm _____ because of the meeting tomorrow. We must cancel it, I'm afraid. Our marketing manager's got ill and...

CJ: Sorry, Carl... Could you _____ for a sec? I have someone else on the other _____.

C: Sure...

Conversation C

M: Martin

P: Pavel

M: Hi Pavel. What's up, dude?**P:** Hey, Martin, I'm in London for two nights. Can we meet?**M:** Ahh, that's a pity. **I'm not in the UK** right now.**P:** Why, where are you? Can you _____ me?**M:** Yeah. I can hear you, but very _____. I'm on a safari in Kenya. It's a _____ signal here.**P:** Kenya? OK, right... I'll better _____ you then...**M:** OK. Anyway, 'twas nice _____ to you, buddy, and...**P:** Martin, you're _____. I'll talk to you later.**M:** OK. Bye.**P:** Bye.**3. Make questions from the words.**

a) want/a/to/you/message/leave/do ? _____

b) phone/your/does/number/she/have ? _____

c) I/Mr/to/please/speak/can/Clark ? _____

d) can/hear/me/you ? _____

4. Write the pattern for Yes-No questions.

_____ + _____ + _____ ?

5. Write the pattern for questions using Wh-question words.

_____ + _____ + _____ + _____ ?

6. Make questions to complete these conversations.

a) A: When _____ ? B: We can meet tomorrow.

b) A: Why _____ ? B: I'm calling about our homework.

c) A: _____ ? B: No, I don't have her phone number.

d) A: Who _____ ? B: She's talking to her colleague.

7. Find the phrases in the telephone conversations in Exercise 2 that you use to:

Answer the phone

t _____
I _____
C _____
H _____

Say you're not available

I _____
W _____
I _____

Put someone through

I _____

Leave/give a message

D _____
I _____

Ask for a phone number

D _____

Ask for a repetition

S _____

Give the reason for calling

I _____

Ask to speak to someone

I _____
C _____



8. You will hear two phone messages left on an answering machine.

Answer the questions, fill in the gaps and decide whether the sentences are true (T) or false (F).

a) When will Maria Crowe call back? _____

b) Where do Marek and Maria go together? _____

c) Marek doesn't want to help Maria. T x F

d) _____ we cannot assist you personally e) _____.

Please, leave your name and your phone number and we will be glad to call you back

f) _____. Thank you g) _____ your call.

h) When did Mr. Graham make new designs? _____

i) The customer wants to see only the products. T x F

j) Mrs. Watson's phone number is 0041 455 623 198. T x F

9. Work in pairs. With your partner, make phone conversations following the instructions below.

Conversation 1

You are calling your friend Peter about a new film that you want to see. Unfortunately, Peter is not at home. Leave him a message.

Student A = Peter's flat

Student B = person calling

A) Answer the phone. Say who you are.

B) Say who you are. Ask to speak to Peter.

A) Say he's not at home.

B) Ask to leave a message.

A) Say you can.

B) Tell about the film. Say when you should meet (6pm) and where (in front of the cinema)

A) Repeat the message.

B) Say it's OK.

A) Say goodbye.

B) Say goodbye.

B) Say goodbye.

B) Say goodbye.

Conversation 2

You are calling Mr Leslie because you want to agree a meeting with him. The telephone is answered by a receptionist who puts you through to Mr Leslie.

Student A = receptionist, Mr Leslie

Student B = person calling

A) Answer the phone. Say who you are.
(company OHC limited)

B) Say who you are. Ask to speak to Mr Leslie.

A) Say you will put him/her through.

PUTTING THOUGH

A) Answer the phone and say who you are. (Mr Leslie)

B) Say hello. Say who you are. Say you want to meet Mr Leslie.

A) Say when you are free. (Monday, 3pm)

B) Say sorry, you are not free. Suggest another day. (Tuesday, 10am)

A) Agree and say goodbye.

B) Say goodbye.

B) Say goodbye.

Emails

Warmer

Think about the last time you received/sent a letter and an email. Make a list of advantages and disadvantages of both.



	Advantages	Disadvantages
Letters	<hr/> <hr/>	<hr/> <hr/>
Emails	<hr/> <hr/>	<hr/> <hr/>

1. Do you know email expressions? Match the words with the icons used in email communication and/or explain their meaning.

SEND

FORWARD

REPLY

ATTACHMENT

AT

DOT

DELETE /BIN



2. Read the emails below. Circle the first words of the emails after the greetings. How are they spelt?

From: Penélope Robre **To:** Jacque Norrain
Subject: Logo Design
Date: Monday 16 September 2013 2:19 p.m.



Dear Mr Norrain,

I would like to ask you for help. I am working on a really exciting project at the moment. Please find the detailed information attached. I need a logo design that will represent peer-to-peer networking. Would you be able to create something in the next few days? Please let me know asap if you can do it for me.

I'm looking forward to hearing from you.

Sincerely,

Penélope Robre

From: Jacque Norrain
Subject: Re: Logo Design

To: Penélope Robre
Date: Monday 16 September 2013 3:52 p.m.

Dear Ms Robre,

Thank you for your email. There should be no problem with the logo design but I need some more information about the specs of the logo. Could you please send me the graphic manual of your company? I would be glad to spend my free time creating the logo for you. I'm attaching a draft which I have already created. Please, let me know what you think about the design and get back to me.

I look forward to cooperating with you.

Best wishes,

Jacque Norrain

From: Penélope Robre
Subject: Re: Re: Logo Design

To: Jacque Norrain
Date: Tuesday 17 September 2013 9:20 a.m.

Dear Jacque

I really appreciated your quick answer to my email. I'm attaching the graphic manual where the colours are specified. Please use green and blue in the logo. The concept of the logo with people is nice but it is too monotonous, I would suggest something brighter. Do you want me to send you any other information? Could I have the new logo by Friday, the 20th? Please, can you confirm this date?

Looking forward to your reaction.

Best regards

Penélope

From: Jacque Norrain
Subject: Re: Re: Re: Logo Design

To: Penélope Robre
Date: Tuesday 17 September 2013 9:50 a.m.

Penélope

Thanks for your comments. I'm afraid that the logo won't be ready on Friday. I will definitely send it to you on Monday morning. I hope that will be OK.

Regards

Jacque

3. In the emails above, pay special attention to the bold sentences. Find and write the phrases that are used to:

Say thank you	Ask for help	Ask for a reply
T _____	I _____	P _____
I _____	W _____	g _____
T _____	C _____	P _____
Offer help	Refer to an attachment	Refer to a future contact
D _____	P _____	I _____
	I _____	I _____
		L _____

4. Match the expressions in column A to expressions in column B and form the greetings and closings used in emails.

Greetings		Closings	
A	B	A	B
Dear	(nothing)	Best	the best
Dear	Smith	All	Regards
Dear Mr/Ms	John	Best	regards
Hello	Peter	Sincerely	wishes
Simon	Sir or Madam	(nothing)	(nothing)

5. Write two emails. In the first one, include the information from a) and exchange your email with your partner. Then reply to his/her email and include information from b).

a) Email (ask for help with a project, ask your partner to come to an urgent meeting – tomorrow, 9am, room 553), attach a document with detailed info about a new wheel mechanism, ask for a reply, refer to future contact)

b) Reply (thank for email, say you will come, attach a photo of a new wheel suspension you saw at a trade fair, offer further help with the project, refer to future contact)

UNIT 3 – How Do I Get There?

Giving Directions – Around the City

Warmer

What is your favourite means of transportation and why?
Which means of transportation do you use most often?
Look at these statements and decide whether you agree (A) or disagree (D) with them.



Travelling by plane is too expensive.	A	D
Trains are very unreliable.	A	D
Travelling by bus is fun.	A	D
To travel around Europe by train is cheap.	A	D
The most comfortable way of travelling is by car.	A	D
Planes are the least dangerous means of transport.	A	D

1. You have received this conference invitation notice. What information do you get from it about the conference? What piece of information is missing?

The Second IASTED International Conference on Robotics

Robo 2011

February 7 – 9, 2012
Pittsburgh, USA

CALL FOR PAPERS / IMPORTANT DEADLINES:

Submissions Due: October 1, 2011

Notification of Acceptance: November 1, 2011

Final Manuscripts Due: November 23, 2011

Registration Deadline: November 30, 2011

The topics of interest to be covered by Robo 2011 include, but are not limited to:

Automation and Manufacturing
Medical Robotics
Nanorobotics
Personal Robots
Space and Underwater Robots
Humanoid Robotics

Adapted from: IASTED, 2011

2. As you can see, information on where exactly the conference is taking place is missing. Read this email and learn more about how to get to the conference venue. Complete the email with the missing words from the list below.

next to	through	left	parking	lane	along	come
near	right	past	front	over	pass	on

From: "S. Pollock" pollock@robo.org
To: adnisov@hdi.vvn.ua, borzack@tun.var.pl ...
Subject: Conference venue



Dear presenters,

We would like to give you some further details on where the conference will be taking place. Since most of you will arrive at Pittsburgh International Airport, we decided to hold the conference in the very same area. The way from the airport to the conference venue will take about 10 minutes on foot.

The name of the conference center is the Grand Palace and it is situated on 23 Oliver Bond Street. You should be staying at the Astoria hotel, which is a) _____ the Grand Palace. It is very easy to find. As soon as you get out of the airport (Terminal 2), turn left and walk for about 30 meters. You'll b) _____ a gas station and a 24/7 on your c) _____. After 30 meters or so you will reach a big d) _____ lot. There is an underpass there. Go e) _____ the underpass and get out at Warren Street. There is a post office f) _____ your right. You have to go g) _____ this post office and turn h) _____ right beyond it. It's a tiny i) _____ for pedestrians only. Walk for about a 100 meters until you reach a small iron bridge. But do not go j) _____ the bridge. Turn left at the coffee shop which is in k) _____ of the bridge and walk l) _____ the river for another 150 meters. You should m) _____ to St. Paul's Hospital. The Grand Palace is n) _____ the hospital. In case you get lost, call our organizing committee hotline.

With best regards,

Susanne Pollock

3. How do you ask for directions? Make questions from the words.

a) get/the/to/how/hotel/I/do? _____

b) way/the/can/hotel/tell/the/you/to/me? _____

4. Match the words to the boxes.






GO (drive/walk...)

ON

AT

IT'S

GO (drive/walk...) TO

_____	<p>next to/beside situated/located in front of opposite behind near/close to between among</p> 	_____	<p>straight on/straight ahead past over (the bridge) along (this street) through (the underpass) round/around (the corner) to the right/left</p> 
_____	<p>the corner the roundabout the right/the left the motorway/the street foot the 2nd, 3rd ... floor</p> 	<p>→</p>	<p>the river the traffic lights the corner the roundabout the crossroads</p> 
_____	<p>the traffic lights the crossroads the corner</p> 		

5. Match only one expression in column A to one expression in column B.

A	B
turn	for about 50 metres
take	the railway station
pass	by bus/car/plane/tram...
take	the second exit
go (drive, walk...)	left/right
travel/go	the second turning on the left/right (BrE)

6. Have a look at the pictures and fill in the correct words below.

INTO

ON

OFF

OUT OF

*I am **in** the car.*



get _____

get _____

*I am **on** the bus/plane/train/ship...*



get _____

get _____

7. Read the email Honza wrote to his friend Boris about his unusual trip to Václav Havel Airport Prague. Complete the email with the missing words from the list below.

by	in	at	out of	off (2x)	on (3x)	into
----	----	----	--------	----------	---------	------

From: jansyn@ghr.cz

To: luskyn@opr.ru

Subject: Trip to St. Petersburg

Dear Boris,

Thank you again for your invitation to Saint Petersburg. I am now sitting in the Moscow airport and waiting for my plane to St. Petersburg. You wouldn't believe how adventurous my trip to Prague Airport was.

Everything began when I got up late. This put me under pressure, so I was a little bit nervous. I decided to travel to the airport a) _____ bus because it was the fastest and cheapest way. As I was checking my air ticket, I didn't realize I had got b) _____ the wrong bus. I realized it after two stops. I got c) _____ quickly and ran to catch the tram. Fortunately, one was coming and I got d) _____. After a few minutes the tram stopped and the driver told us that there had been an accident e) _____ the crossroads and everybody had to get f) _____. I was desperate.

A taxi was my last chance. I caught a taxi, got g) _____ the car and told the driver what had happened to me. He understood my problem. He was driving very fast, ignored red lights at the crossroads and didn't even give way h) _____ the roundabout.

I almost got sick i) _____ the taxi and I was really happy when I could get j) _____ it at the airport. However, I caught my plane to Moscow!

So, here I am and I'm really looking forward to seeing you in St. Petersburg.

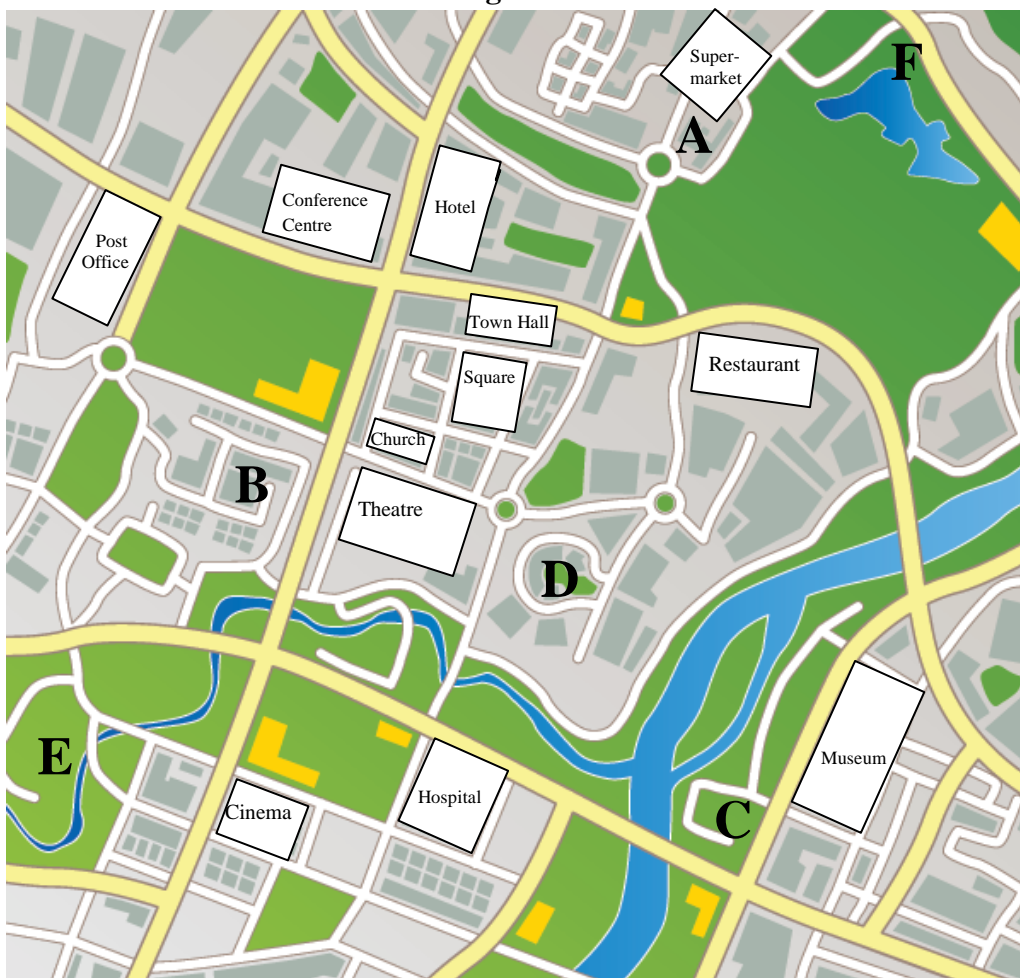
Regards,

Honza

8. Look at the map and imagine you meet a foreigner. She asks you: “Could you please tell me how I can get:

- a) from the company offices (A) to the factory (B)?
- b) from the car park (C) to the exhibition area (D)?
- c) from the sport centre (E) to the lake (F)?

Give her directions to where she wants to go.



9. Work in pairs. Interview your partner about a place he/she likes going to in Plzeň. Your partner will give you directions so that you could go there without him/her.

Giving Directions – University Campus

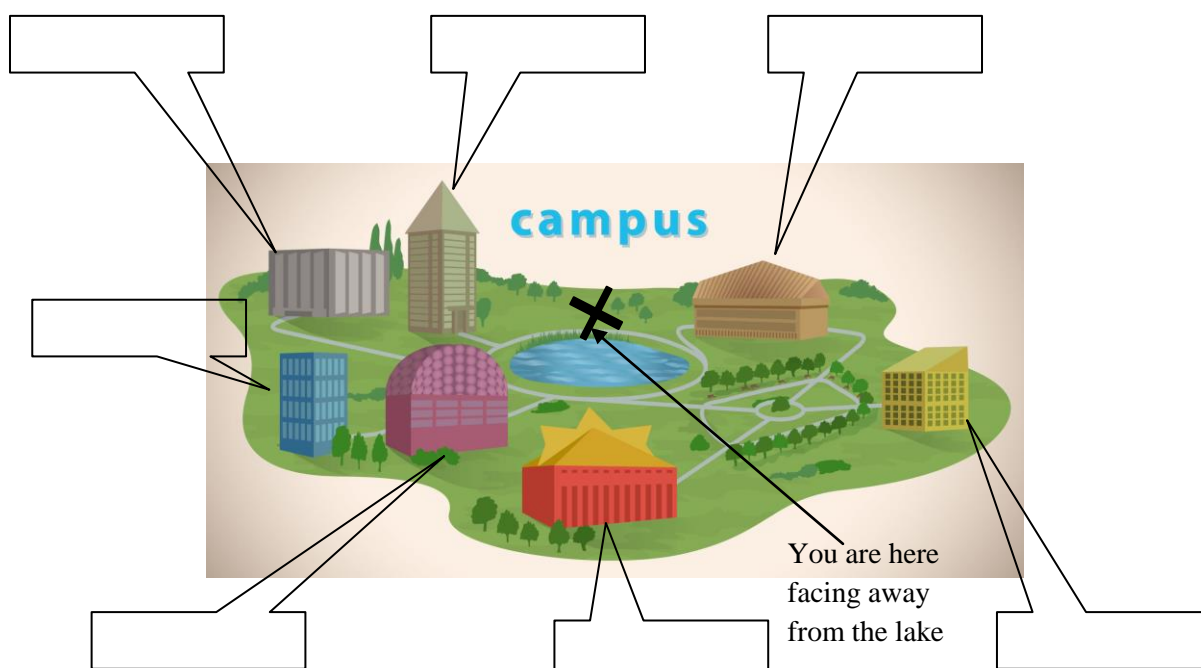
Warmer

Do a whole-class survey and find out which of your classmates lives the closest to the university, which one lives the furthest away and how much time they usually spend getting to school.



1. You will hear a recording describing the navigation around a university campus. On the map below, label the individual buildings according to what you hear.

Vocabulary help: FME – Faculty of Mechanical Engineering
FAS – Faculty of Applied Sciences



2. Now listen again to the recording and fill in the missing expressions.

The Faculty of Mechanical Engineering is the tall green building you can see a) _____ from the central lake where you are standing now. The FME is the building b) _____ to the library with a pointed roof. c) The second building _____ is the gym. The gym is open every day, even at weekends, from 8 a.m. to 8 p.m., but do not forget to bring your student card and your sport shoes with you.

I have already mentioned the library. If you stand d) _____ the lake e) _____ the FME, the library is the building on your left with the semi-

circular roof. You can't really f) _____ it. There is another building g) _____ the library. This is the Faculty of Law and you can also find the office of the Dean there. It is h) _____.

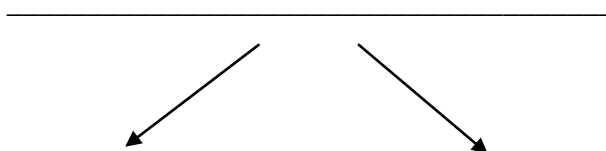
Facing the FME again, you will have the Faculty of Applied Sciences right behind you. If you i) _____ and face it, there is the university canteen j) _____.

In case you need to visit the Students' Office, k) _____ from the FAS l) _____ the park where there are benches you can sit on. The Students' Office is on the 2nd floor of that building. The building belongs to the University Design Centre.

3. In the text, find the 9 names of important buildings and places on a university campus.

FME _____ *library* _____

4. What is the official English name of your university and of all faculties and institutes?



Faculties and institute on the university campus

Faculties in the city centre

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

5. Julia is going to Plzeň in the Czech Republic to attend a conference at the University of West Bohemia. She is going by plane; however, there were some last minute problems and flight changes.



Listen to the recording and tick ✓ the things which are mentioned in the announcements.

- ☐ date of flight
- ☐ carrier
- ☐ boarding time
- ☐ food served on board
- ☐ gate number
- ☐ flight number
- ☐ type of plane
- ☐ class type



Now have a look at Julia's boarding pass. Listen to the recording again and correct the information about Julia's flight.

<i>AIR ITALIA</i>		<i>AIR ITALIA</i>		<i>AIR ITALIA</i>		<i>AIR ITALIA</i>	
Carrier	AIR ITALIA			Carrier	AIR ITALIA		
Name	NATTORE/MISS			Name	NATTORE/MISS		
From	ROME	To	PRAGUE	Flight	AZ7213	Date	7 JUL
Service Information		Boarding time	2015	Seat	26C		
	NX8561247354	Gate	A12	From	ROM	To	PRG
				Class	ECONOMY		

6. Julia landed in Prague and travelled by coach to Plzeň. She is now at the Plzeň Central Bus Station but she doesn't know the way to the campus of the University. She asks: "Please, how can I get to the Faculty of Mechanical Engineering on the university campus?" Give her detailed directions.

UNIT4 – Functions and Processes

What Is It Used For?

Warmer

Look at the pictures of various things. Match the pictures with the verbs below describing the main function of these objects.

hit heat boil call cool open listen wash measure navigate loosen/tighten



1. Choose four objects from the pictures above and answer these questions. Then complete the sentence patterns used for describing functions of objects.

What is the object used for? What is the object used to do? What is its function?

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

USED FOR + _____ USED TO + _____ The function is TO + _____

2. Complete the sentences with the following words:

machine	appliance	tool	device	gadget
---------	-----------	------	--------	--------

- a) An _____ is a piece of equipment for a specific task, typically for domestic use.
- b) A _____ is used for a particular function, usually held in one hand.
- c) A _____ usually has several parts and applies mechanical power.
- d) A _____ is a small mechanical device or tool which does something useful.
- e) A _____ is a piece of mechanical or electronic equipment.

3. Do you know the names of some other appliances, tools and machines? Find the following objects in the pictures.

air conditioner drilling machine pliers allen key cooker
 screwdriver vacuum cleaner iron grinding machine
 spanner (wrench) CNC milling machine turning machine (lathe)
 hairdryer philips screwdriver



4. Listen to two short recordings describing two objects. What is the object described?

- a) _____ b) _____

5. Pairwork. Think of six objects and describe their functions. Your partner will guess what these objects are.

E.g. It is for writing on the blackboard. – chalk

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____
- f) _____

How Do You Do It?

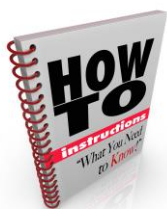
Warmer

Look at the list of operations you might need to do sometime. Which of these would you need a manual for and which would you be able to do without one? Tell your partner.



"We love the fact you are a doer.
We just don't like what you do."

- a) Change a flat tyre
- b) Remove a hard disc from a computer
- c) Replace the oil filter in a car
- d) Disassemble a computer mouse
- e) Change a light bulb
- f) Remove a jammed paper from a printer
- g) Fix bike brakes
- h) Insert a SIM card into your mobile phone



1. Now choose one operation you can do without a manual and briefly explain to your partner how to do it.

2. In 6-8 sentences, give your partner instructions on how to do the chosen operation.

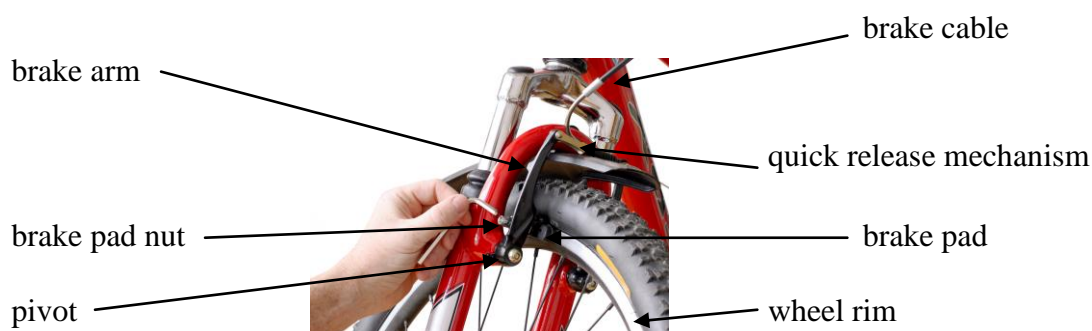
Your revision (Exercise 9)

3. Give some examples of what you can:

Fix	Disassemble	Remove	Replace	Insert
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

4. You are now going to read a set of instructions on how to fix a bike brake. However, the individual logical steps are in the wrong order. Your task is to reorganize them to make the procedure logical.

Picture of V-brake



How to fix bike brakes

☐ The first step in replacing the pads is to operate the brake quick release mechanism. Undo the nuts securing the brake pads, take out the old ones and pop in the new. Ensure the pads are in the right position and the right way up before tightening the nuts slightly. Tighten the nuts by degrees, making sure the pads remain aligned with the wheel.

☐ First, identify the type of brakes on your bike – the V-brakes found on mountain bikes, cantilever types, disc brakes or side-pull breaks. Whichever one you have, they must be set up properly. Regarding tools, you will need an allen key and a small spanner. If fitting V or cantilever brakes, there is a specified ideal distance between the brake arms. It is usually indicated by a line on the cable carrier that links the pieces of cable attached to the brake arms.

☐ Next, check that your brake pads are not worn down, and that they are wearing evenly. If part of the pad is missing the wheel rim, the pad will either need to be cut down or replaced. If there are signs of major wear on either the brake or wheel rim, one or both may require replacement.

☐ If you align this guide to the cable, you'll have the correct setting. Test your brakes weekly, and service them monthly if you are a regular bike user.

☐ Follow this simple four stage method: First grab your brake levers. They should feel tight and have a smooth action. If the lever goes straight down to the handlebar, adjust your brakes immediately. If you have V or cantilever brakes, you will need to adjust the screw attachments on the brake levers. Unscrew the tensioning bolt until the brakes are active, and then tighten the locking nut back against the brake lever.

☐ If you wish to upgrade your brakes, make sure you have a full set of manufacturer's instructions and if possible a photo of the brakes in full working order to refer to. When fitting new brake cables, you should have some grease to apply to the pivots, and ideally a cable puller, in addition to your allen key and spanner.

Adapted from: How To.TV, 2011

5. Find the words in the text which have a similar meaning to the following words. The number of the paragraph will help you.

a) inspect (3) _____

b) recognize (1) _____

c) put into action (5) _____

d) loosen (4) _____

e) ensure (5) _____

f) remove (4) _____

g) extract the bolt (2) _____

h) set, adapt (2) _____

i) fasten (2) _____

6. To give instructions, we use imperatives and sequencers. Find some examples in the text from Exercise 4.

a) imperatives _____

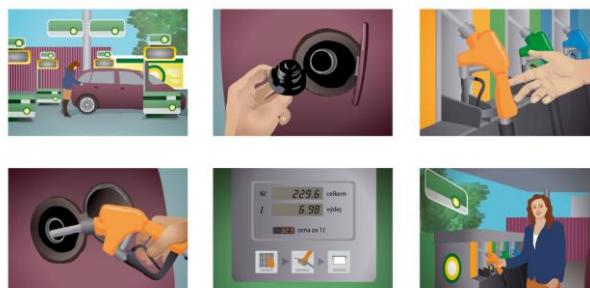
b) sequencers _____

7. Are you more into cars or computers? You decide, and then study one of these picture guides.

Keyboard cleaning



Refuelling a car



8. Write instructions on how to do either of the activities above. Write a minimum of 80 words.

9. Return to Exercise 2 and re-write instructions for your chosen operation. Do not forget to use imperatives and sequencers in your text.

UNIT 5 – Shapes and Dimensions

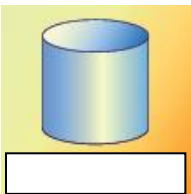
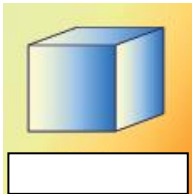
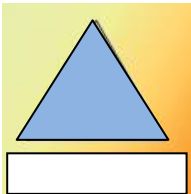
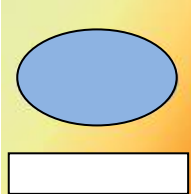
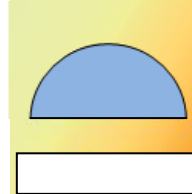

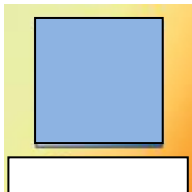
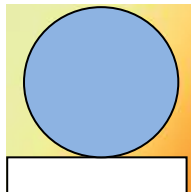
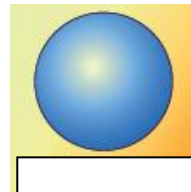
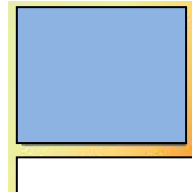
What Shape Is It?

Warmer

What do you think is the most frequently used shape? Do you like lines or curves? What is the question we ask when we ask about the shape? _____

1. Match the names of shapes with the pictures.

a circle	a semi-circle	a rectangle	a square	an oval
a triangle	a cube	a cone	a sphere	a cylinder

2. All the words above are nouns. What are their adjectives?

E.g. circle (noun) – circular (adjective)

NOUN	ADJECTIVE	NOUN	ADJECTIVE
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

3. Choose at least six shapes and think about some objects which have these shapes.

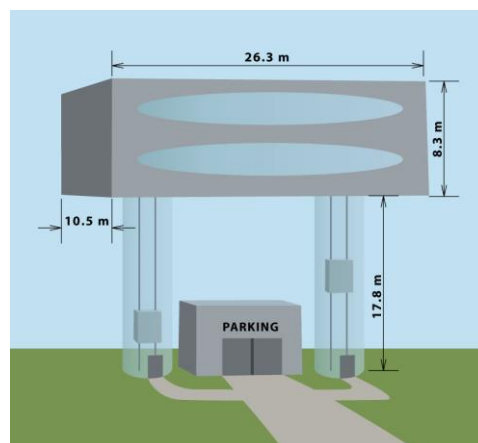
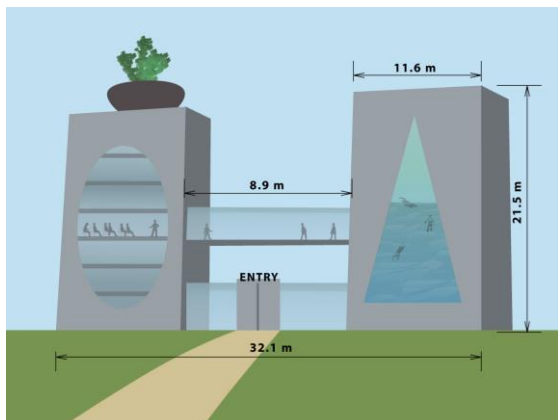
E.g. A table is often rectangular. A ball is a sphere.

_____	_____
_____	_____
_____	_____



4. Listen to the instructions and draw what the man in the recording tells you.

5. Look at the pictures of the two buildings. With your partner, describe their shapes and design.



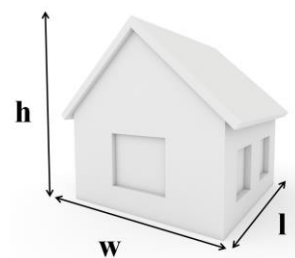
6. First, draw a simple design. Then, for your partner, prepare a description of the design.

Your design:

How High Is It?

Warmer

What are the three basic parameters we usually use when we talk about dimensions of objects?



1. Look at the information about some famous buildings. Answer the questions according to the facts given and your own knowledge.



Empire State Building NY, USA

Opened: 1931
Construction: 13 months
H: 443 m with antenna
102 stories



Taj Mahal Agra, India

Construction: 21 years
Age: 360 years
L:/W: 55 m
H: 35 m
4 minarets 40 m high



Burj Al Arab Dubai, UAE

Built on artificial island
280 m offshore
H: 321 m
28 double-story floors
Opened: 1999
Construction: 5 years



London Eye London, UK

H: 135 m
Diameter: 120 m
Opened: 1999 after several months of construction
32 capsules 25 people each
1 revolution/30 minutes



Opera House Sydney, Australia

H: 67 m Construction: 14 years
W: 120 m Opened: 1973
L: 183 m Concert hall capacity: 2,690 people

- Which structure is the oldest? What's its age? _____
- What is the height of the second tallest building? _____
- What is the width of the Opera House in Sydney? _____
- Which building is the lowest? _____
- Guess which structure holds the fewest people. _____
- Which structure is as wide as the London Eye? _____
- How long is the Taj Mahal? _____

2. Make questions with the words and complete the question patterns. Write the nouns and adjectives describing dimensions.

is/Opera House/length/the/what/the/of?	the/is/long/how/Opera House?
_____ + _____ + noun + _____ ...?	_____ + adjective + _____ + _____ ...?
length	_____
_____	wide
_____	high
weight	_____
_____	deep
_____	old

3. Write these numbers in words and complete the rules with the words below.

- a) 86.504 _____
- b) 86,504 _____

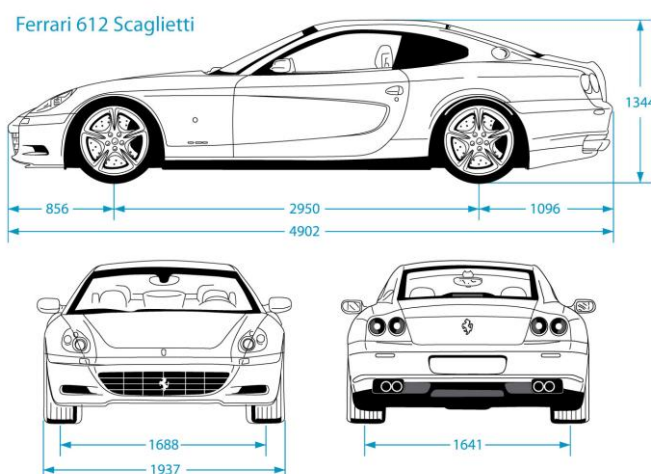
separate numbers	point (.)	comma (,)	point (.)
------------------	-----------	-----------	-----------

We use a _____ to divide the whole number and decimal numbers.

We use a _____ to divide thousands and hundreds in the number.

After a _____, we read the numbers as _____.

4. Look at the schematic drawing of a car below and write about its dimensions. (All dimensions are given in cm.) Use both ways to describe the parameters of this car: *The length of ... is ...* and *The ... is 30cm long*.



Which is Bigger?

5. There are different ways of comparing. Complete the sentences with the words below.



more as less the most than much as

- a) The Opera House in Sydney is **younger** _____ the Empire State Building.
- b) The Empire State Building is one of _____ **tallest** structures in New York.
- c) Materials used in the Taj Mahal are _____ **natural than** materials used for the London Eye.
- d) The Burj Al Arab is one of **the** _____ **comfortable** hotels in the world.
- e) The London Eye is _____ **wide** _____ the Opera House in Sydney.
- f) The Burj Al Arab is _____ **more modern than** the Taj Mahal.
- g) The construction of the Empire State Building was **far** _____ **time-consuming** than the construction of the Opera House in Sydney.

6. These two texts provide some facts on two of the largest passenger ships. Read the texts and complete the table below.

Independence of the Seas

The length of *Independence of the Seas* is 338.92 meters, which is equal to 1,111.9 feet. The beam (width) of the ship is 56.00 meters, which is about 180 feet, and the draft while the ship is fully loaded and bunkered is about 8.80 meters, or 29 feet. The ship has been in service since April 2008.

Independence of the Seas has a gross tonnage of 154,407 gross tons. The ship typically cruises at 21.6 knots (24.9 mph). The propulsion system is diesel-electric 3 x 14 MW. But the main purpose of a cruise ship is to carry a lot of passengers and to give them a luxury vacation on the sea. And *Independence of the Sea* offers exactly this. The ship has a capacity of 4,370 passengers, who are served by 1,360 crew members. The cost of *Independence of the Seas* was 540 million USD, but the beauty of the vessel is worth this price.

Adapted from: Maritime Transport Journal, 2010b

UNIT 6 – Mechanisms

How Does It Work?

Warmer

Which basic mechanisms do you know? Where are they used? Which one do you think is the simplest but, at the same time, the most effective mechanism? Why?

1. Look at the pictures of simple mechanisms and match them with their names.

lever

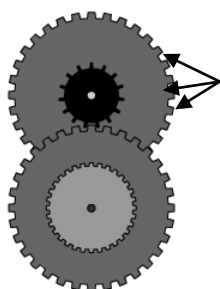
pulley

gear

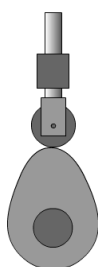
crank

cam

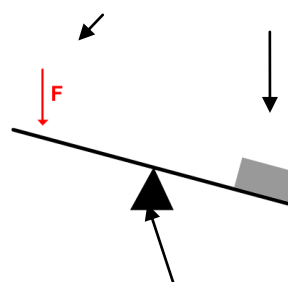
a)



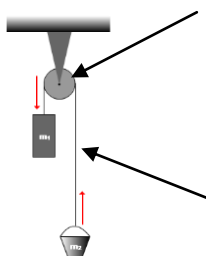
b)



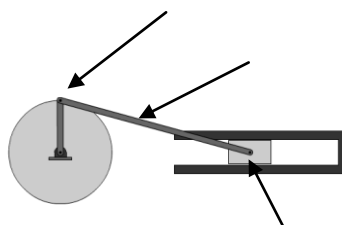
c)



d)



e)



2. Listen and decide which mechanism is being described in each part of the recording.

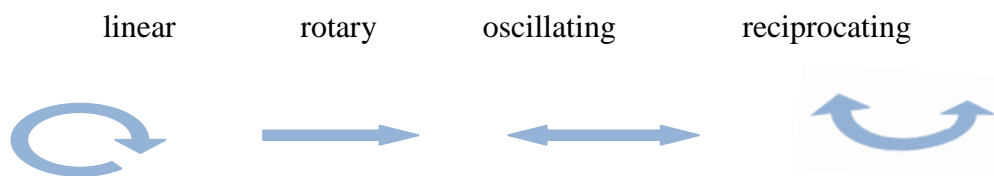
Recording 1) _____ Recording 2) _____ Recording 3) _____

Recording 4) _____ Recording 5) _____



3. Listen to the descriptions again and label the parts of the individual mechanisms in Exercise 1.

4. Match the names of different kinds of MOTIONS to the pictures.



5. Complete the sentences with the verbs describing motions.

- a) The piston in the cylinder _____ (it moves _____).
- b) The shaft _____.
- c) The pendulum of the wall clock _____ (it swings).
- d) The train moves in a _____ motion.



6. Listen to the description of a cam mechanism and complete the text with the missing words.

This rotating or sliding piece in a mechanical linkage is used especially in transforming

- a) _____ motion into b) _____ motion or vice-versa. It is often part of a rotating wheel (e.g. an eccentric wheel) or shaft (e.g. a cylinder with an irregular shape) that strikes a lever at one or more points on its circular path. It can have the form of a simple tooth, or an eccentric disc or other shape that produces a smooth c) _____ (back and forth) motion.

Adapted from: Wikipedia (2011c)

7. Look at these mechanisms used in everyday life and describe their movements.



- a) _____
- b) _____
- c) _____
- d) _____
- e) _____

8. Look at the picture of a very interesting mechanism. Write what this mechanism is used for and locate the following parts in the picture.

It is used _____.

C - spoon	napkin
lever	toast
pulley	salt
parrot	spoon
knife	box
bucket	M - string
rocket	string



9. Read the text about how the self-operating napkin works and complete it with the following words.

pushes	pulley	starts	rotates	oscillating
moves up	pulls	lever	linear	

This mechanism is useful for everyone and the function of this gadget is to clean one's mouth. It consists of two spoons attached by a string, a parrot sitting on a lever, a bucket on a pulley, a rocket, a string and a napkin. **First**, the man puts the spoon into his mouth. This _____ the first string. Another spoon _____ upward and the toast flies from the spoon to the parrot. The parrot sits on a place which is a _____ mechanism.

When the parrot catches the toast, the parrot _____ the left side of the lever down. The right end _____ and salt falls into the bucket. When the bucket is heavy enough, it works as a weight on the _____ and opens the box.

The rocket is ignited when the box is opened. **Then** the _____ movement of the flying rocket cuts the string. The napkin _____ swinging when the string is cut. **Finally**, this _____ motion cleans the man's mouth.

10. Answer the questions according to the text.

- a) What happens when the parrot pushes the left side of the lever down? _____
- b) What happens when the bucket is heavy enough? _____
- c) What happens when the box is opened? _____
- d) What happens when the string is cut? _____

11. To describe cause and effect we use:

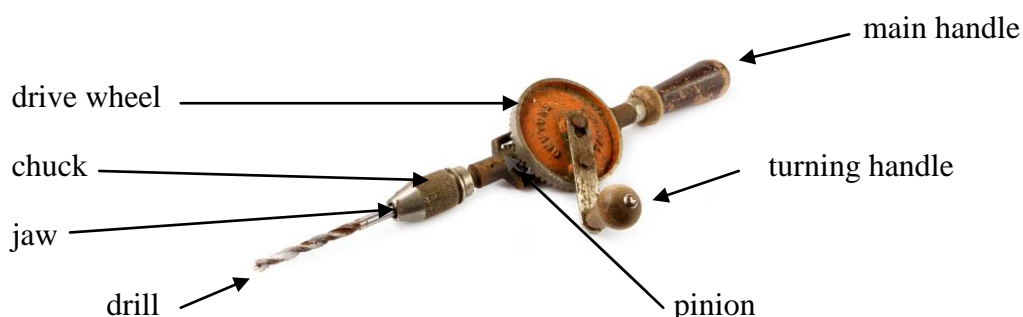
When + _____ , _____ • **OR** _____ **when** _____ .

12. In the text, the words in bold italics are called “sequencers”. Decide in which part of the text we usually use them and add some more sequencers that can be used.

Sequencers used:

- a) at the beginning _____
- b) in the middle _____
- c) at the end _____

13. Write a description of the hand drill. What is the function of the mechanism? What are its parts? What happens when you move its parts? Which movements do the parts make? In the description use: When..., Present Simple and sequencers.



14. Work in groups of three or four people. With your partners, invent your own mechanism. It can be anything – it can, for example, be used for opening a window, stirring coffee, cleaning your skis, etc. Draw the design, explain the function of the mechanism, write a description and introduce your invention to your classmates.

Your design:



MINISTERSTVO ŠKOLSTVÍ,
MLÁDEŽE A TĚLOVÝCHOVY



INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

Sample Final Test for the Course English for Mechanical Engineering 3

Time: 80 minutes

Section A - LISTENING

You will hear a short recording. Answer the questions, complete the gaps and decide whether the sentences are true (T) or false (F). You will hear the recording twice.



Sears Tower

- 1) In which year was the Sears Tower built? _____
- 2) New York's World Trade Center towers were 25 metres taller. T x F
- 3) How high is the Sears Tower? _____
- 4) The Sears Tower's antennas are not included in the total height of the building. T x F

"The Sears Tower is still the (5) _____ Chicago skyscraper.

The building consists of nine framed tubes, which are actually nine skyscrapers put together

- (6) _____ one building. Originally, the plan included
(7) _____ tubes...."

- 8) How many stories do all nine tubes have? _____
- 9) A lot of tourists visit the Sears Tower's skydeck. T x F
- 10) When did Sears sell the building? _____

	10
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Section B – USE OF ENGLISH

1. Conversation

Complete the gaps in the short dialogues using the most suitable phrases, sentences or questions.

1) A: Can I speak to Phoebe Norton?

B: I'm _____.

2) A: How _____?

B: Turn left and my office is next to the copy machine.

3) A: _____?

B: A TV is rectangular.

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2. Questions

Make questions. Ask about the underlined information.

1) The technician checks the device every six months.

_____?

2) The ship is 200 meters long.

_____?

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3. Gap-filling

Fill in the gaps with the most suitable word. Use ONE word only.

Contracted forms such as don't, didn't ... = 1 word.

1) The CD is _____ big as the DVD.

2) Robin will start cleaning a new tool _____ five minutes.

3) Please _____ turn off the light. I want to read.

4) A spanner is used _____ tightening bolts.

5) Were you driving a car or did you come _____ bus?

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4. Gap-filling

Complete each sentence with a suitable word from this list. Choose 7 of the 10 words.

boarding	Europe	flight	remove	at	field
on	European	wide	width		

- 1) The laboratory is situated _____ the third floor.
- 2) Austria is a _____ country.
- 3) What is the _____ of the garage? I want to buy a new car but I don't know if it will fit inside.
- 4) When the paper is jammed in the printer, it's best to _____ it.
- 5) There are no classes _____ Christmas.
- 6) To get on the plane, you need to have a _____ pass.
- 7) My sister's _____ of study is Machine Design.

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5. Multiple-choice

Circle the letter of the correct option to fill in the gap.

- 1) The bucket is attached to the string and _____ a swinging motion.
A) maked B) makes C) making D) make
- 2) This new grinding machine is _____ than the older one.
A) reliable B) most reliable C) less reliable D) reliabler

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How a Piano Works

A piano is an instrument with a keyboard and strings which is designed to produce a lot of musical tones. The main parts of the piano, in particular the grand piano, are the cast iron frame, the pin block, the bridge, the soundboard, the case, the keyboard of 88 keys (52 white and 36 black), the action, and the pedals, as well as the 220 to 240 strings.

The way all of these parts work is very complicated. The first thing is the depression of a key by the pianist. The pressing of the key causes the mechanism to lift levers and depress points of the action, leading to the hammer striking the string. The string then vibrates and the sound is heard for a period of time; it is influenced by a pedal which is pressed by the pianist. The first pedal softens the music by shifting the action. The second pedal shortens the length of time of the note by quickening the attack. The *sostenuto*, the third pedal, lengthens the time of sound heard. The *sostenuto* is mostly used when playing many bass or lower end notes. The strings vibrate across the soundboard to the bridge. The soundboard, cast iron frame and case hold the sound as it flows through and then out of the piano. With the top up, the sound coming out of the piano has not only high tone quality, but also good resonance. The resonance is affected by the wood used in creating the piano. If the wood is of high quality, the resonance is great, but if the piano is poorly constructed with a weak wood, the resonance of the sound will also be of poor quality. If the top of the piano is down, the music is certainly quieter but also has more resonance.

Adapted from: Wolfe, K. (2004)

1. Answer according to the text.

1) What are the main components of a piano? (name at least 3)

2) What is the basic principle of creating one tone of the piano?

3) How does it happen that the string vibrates?

2. Are these statements true (T) or false (F)?

4) Thanks to *sostenuto*, the sound can be heard longer. T x F

5) The quality of wood has no effect on the piano sound. T x F

6) If you do not want the music to be loud, put the top of the piano down. T x F

3. Find the words in the text which have a very similar meaning to the following words.

7) pushing down on _____

8) make, create _____

4. Briefly explain IN YOUR OWN WORDS what it means.

9) quickening _____

10) to lift _____

Write an email to your friend about your studies in Plzeň. Introduce what and where you study. Describe your studies this semester, including some information about your timetable and the subjects you had. Compare it with your last semester. Write approximately 80 words.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

MINISTERSTVO ŠKOLSTVÍ,
MLÁDEŽE A TĚLOVÝCHOVY



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