

TOUCHPAD

Information Technology
(Open Office)

Teacher's Manual

Extended Support for Teachers



www.orangeeducation.in www.thetouchpad.com

Teacher's Time Table

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Periods Days	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday



DEVELOPMENT MILESTONES IN A CHILD

Development milestones are a set of functional skills or age-specific tasks that most children can do at a certain age. These milestones help the teacher to identify and understand how children differ in different age groups.

	Age 5 - 8 Years
Physical	 First permanent tooth erupts Shows mature throwing and catching patterns Writing is now smaller and more readable Drawings are now more detailed, organised and have a sense of depth
Cognitive	 Attention continues to improve, becomes more selective and adaptable Recall, scripted memory, and auto-biographical memory improves Counts on and counts down, engaging in simple addition and subtraction Thoughts are now more logical
Language	 Vocabulary reaches about 10,000 words Vocabulary increases rapidly throughout middle childhood
Emotional/Social	 Ability to predict and interpret emotional reactions of others enhances Relies more on language to express empathy Self-conscious emotions of pride and guilt are governed by personal responsibility Attends to facial and situational cues in interpreting another's feelings Peer interaction is now more prosocial, and physical aggression declines

Age 9 - 11 Years				
Physical	Motor skills develop resulting enhanced reflexes			
Cognitive	Applies several memory strategies at onceCognitive self-regulation is now improved			
Language	Ability to use complex grammatical constructions enhancesConversational strategies are now more refined			
Emotional/Social	Self-esteem tends to risePeer groups emerge			

Age 11 - 20 Years				
Physical	 If a girl, reaches peak of growth spurt If a girl, motor performance gradually increases and then levels off If a boy, reaches peak and then completes growth spurt If a boy, motor performance increases dramatically 			
Cognitive	Is now more self-conscious and self-focusedBecomes a better everyday planner and decision maker			
Emotional/Social	May show increased gender stereotyping of attitudes and behaviourMay have a conventional moral orientation			

Managing the children's learning needs according to their developmental milestones is the key to a successful teaching-learning transaction in the classroom.





TEACHING PEDAGOGIES

Pedagogy is often described as the approach to teaching. It is the study of teaching methods including the aims of education and the ways in which such goals can be achieved.

Lesson Plans

A lesson plan is the instructor's road map which specifies what students needs to learn and how it can be done effectively during the class time. A lesson plan helps teachers in the classroom by providing a detailed outline to follow in each class.

A lesson plan addresses and integrates three key components:

- Learning objectives
- Learning activities
- Assessment to check the student's understanding

A lesson plan provides an outline of the teaching goals:

Before the class:

- 1. Identify the learning objectives.
- 2. Plan the lesson in an engaging and meaningful manner.
- 3. Plan to assess student's understanding.
- 4. Plan for a lesson closure.

During the class:

Present the lesson plan.

After the class:

Reflect on what worked well and why. If needed, revise the lesson plan.

"Knowing yourself is the beginning of all wisdom."

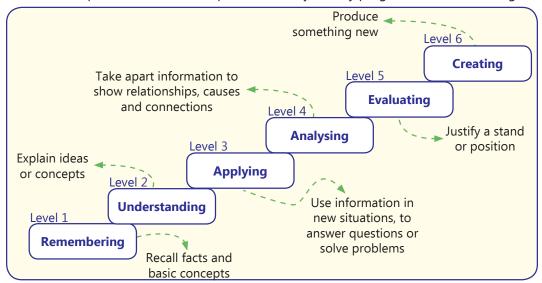
Teaching Strategies

Numerous strategies have evolved over the years to facilitate the teaching-learning process in the classrooms.



Bloom's Taxonomy

Bloom's Taxonomy was created by **Dr Benjamin Bloom** and several of his colleagues, to promote higher forms of thinking in education instead of rote learning. There are three domains of learning: cognitive (mental), affective (emotional), and psychomotor (physical). However, when we refer to Bloom's Taxonomy we speak of the cognitive domain. Bloom's Taxonomy is a list of cognitive skills that is used by teachers to determine the level of thinking their students have achieved. As a teacher, one should attempt to move students up the taxonomy as they progress in their knowledge.



Teachers should focus on helping students to remember information before expecting them to understand it, helping them understand it before expecting them to apply it to a new situation, and so on.

Class 10

LESSON PLAN

Touchpad Information Technology

Part-A: Employability Skills

1. Communication Skills

Teaching Objectives

Students will learn about

Communication

Communication Cycle

Principles of Effective Communication

Sentence and its Kinds

Parts of Sentence

Articles

Types of Communication

Barriers in Effective Communication

Principles of Effective Communication

Phrase

Parts of Speech

Construction of a Paragraph

Teaching Plan

While teaching this chapter, tell the students that the word 'Communication' comes from the Latin word 'Communicare', means 'to share'.

Number of Periods
Theory
h

Show the students the Methods and Types of Communication along with its advantages and disadvantages:

- Verbal Communication
- Non-Verbal Communication
- Public Speaking
- Visual Communication

Explain the communication cycle to the students and the phases it involves:

Sender

Encoding

Channel

Decoding

Receiver

Feedback

Tell the students about the importance of feedback and barriers in effective communication.

Define the types of barriers and measures to overcome barriers to the students in easy language for better understanding where:

Types of barriers are:

Physical

Psychological

Linguistic

Cultural

Mechanical

Measure to overcome barriers are:

- Eliminating Differences in Perception
- Reduction and Elimination of Noise Level
- **Proper Media Selection**

Use of Simple Language

Active Listening

Show the students the principles of effective communication and also explain the 7Cs of communication with their aspects like:

Concise Concrete

Coherent

Correct

Complete

Clarity Courteous

Explain the following to the students with their proper purpose in detail:

Sentence and its Kind

Phrase

Parts of Sentence

Parts of Speech

Articles

Construction of a Paragraph

Extension

Ask the students some oral questions based on this chapter.

- O. What is Communication?
- O. What are the method of communication?
- Q. Explain communication cycle.
- Q. Write about the importance of feedback.
- Q. Explain the barriers in effective communication.
- Explain the 7Cs of communication. Q.
- O. Define:

Sentence and its Kind a.

b. Phrase

Parts of Sentence C.

Parts of Speech d.

Articles 9

f. Construction of a Paragraph

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 19 and 20 in the main course book under Exercise.

2. Self-Management

Teaching Objectives

Students will learn about

Skills of Self Management Stress

Self -Awareness Self Motivation

Self -Regulation: Goal Setting
Self -Regulation: Time Management

Teaching Plan

While teaching this chapter, tell the students that self-management is the modus of applying and using one's self characteristics in a righteous and responsible way.

Number of Periods
Theory
10

 $Introduce\ the\ students\ to\ Stress\ and\ also\ explain\ them\ how\ to\ manage\ stress\ \&\ work\ independently.$

Tell the students what measure are to be followed to reduce stress:

Physical Exercise

Yoqa

Meditation

Enjoyment

Vacation

Nature Walks

Share the information about self-awareness to the students which are further divided into external and internal.

Tell the students about self-motivation and how to get motivated while using real life examples. Explain the meaning of self-regulation to the students.

Extension

Ask the students some oral questions based on this chapter.

Q. What is self-management?

O. What is stress?

Q. What measure can be taken to reduce stress?

O. What is self-awareness?

O. What is self-motivation?

Q. What is self-regulation?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 27 in the main course book under Exercise.

3. Information Technology & Communication

Teaching Objectives

Students will learn about

- Classification of Operating System
- Types of Operating System
- Running an Application
- Device Driver
- Symptoms of Computer Virus
- Removing Temporary Files

- Functions of Operating System
- Common Terms of Operating System
- Basic Components of Interface Screen
- Malware
- Ways to Prevent a Virus

Teaching Plan

While teaching this chapter, tell the students that an operating system refers to the set of program that provides an interface to use the resources of computer system effectively and efficiently.

Number of Periods
Theory
10

Define the meaning, importance and role of an operating system to the students.

Explain the classification of operating system to the students:

- On the basis of interface
- On the basis of number of users
- On the basis of programming
- Other classifications

Tell the students about the functions of operating system in detail.

Explain the following to the students in detail:

UNIX

Solaris

Microsoft Windows

GNU-Linux

Mobile Operating System (Android, Symbian)

Share the common terms and their definition with the students:

Desktop

Icons

Panel/Taskbar

- System Tray
- Clock

Main Menu/ Start Button

Show the students how to run an application in an operating system and define the basic components of interface screen.

Demonstrate the meaning of file drivers and their purpose in an operating system.

Share the steps involved in performing the following function to the students:

- File management
- Creating a new file/folder
- Moving a file/folder

- Copying a file/folder
- Renaming a file/folder
- Deleting a file/folder

- Restoring a file/folder
- View properties of a file
- Caring of computer



Explain what is a malware to the students and define the it type:

Virus

Worms

Trojan horse

Spyware

Boot sector virus

Program file virus

Spam

Also, share the ways to prevent the computer from a virus and removing a temporary file.

Extension

Ask the students some oral questions based on this chapter.

- Q. How does operating system act as a messenger between hardware and application program?
- Q. Differentiate between CUI and GUI.
- Q. What is Time Sharing OS?
- Q. Write any four (4) functions of OS.
- Q. List the name of any five (5) operating systems.
- Q. List the name of five (5) Linux distributions.
- Q. What are icons? List some common icons present on the desktop of Linux and Windows.
- Q. What is a file system? List different categories of file system.
- Q. Write any four (4) points to be kept in mind while cleaning the computer.
- Q. List the ways to prevent virus infection in a computer.

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 54 and 55 in the main course book under Exercise.

4. Entrepreneurship

Teaching Objectives

Students will learn about

Entrepreneurship

Functions of Entrepreneur

Myths about Entrepreneurship

- Qualities of Entrepreneurs
- Importance of Entrepreneur
- Entrepreneurship as a Career Option

Teaching Plan

While teaching this chapter, tell the students that entrepreneurship is not only about self-employability but it plays a crucial part in completion of life cycle of society.

Number of Periods
Theory
15

Explain the qualities of entrepreneurs and functions of entrepreneurs to the students.

Show the importance of an entrepreneur to the students and the myth about entrepreneurship. Define the entrepreneurship as a career option to students in detail.

Extension

Ask the students some oral questions based on this chapter.

- Q. Explain myth about entrepreneurship.
- Q. Define entrepreneurship as career option.
- Q. When is entrepreneurship successful?
- Q. How does entrepreneurship play an important role in the life cycle of society?
- Q. List the qualities of an entrepreneur.
- Q. Write the function of entrepreneur.

Evaluation

After explaining the chapter, let the students do the exercises given on Page 61 in the main course book under Exercise.

5. Green Skills

Teaching Objectives

Students will learn about

- Sustainable Development
- Sustainable Development Goals

Teaching Plan

While teaching this chapter, tell the students that environment can be classified as natural and artificial. Natural environment consists of all the living and non-living things. It encompasses the interaction of all living beings, climate and natural resources.

Number of Periods
Theory
5

Define sustainable development to the students and importance of sustainable development.

Explain the problems related to sustainable development to the students.

Extension

Ask the students some oral questions based on this chapter.

- Q. What is environment?
- O. Differentiate between:
 - a. Renewable resources
 - b. Non-Renewable resources



- Q. What is sustainable development?
- Q. Write the importance of sustainable development.
- Q. Write problems related to sustainable development.

Evaluation

After explaining the chapter, let the students do the exercises given on Page 6 in the main course book under Exercise.

Class 10

LESSON PLAN

Touchpad Information Technology

Part-B: Subject Specific Skills

1. Advanced Features of Word Processor

Teaching Objectives

Students will learn about

Styles

Template

Defining the Hierarchy of Headings

Mail Merge

Modifiying Default Template

Table of Contents

Teaching Plan

While teaching this chapter, tell the students word processing package helps in creating, editing, formatting, modifying, printing and storing the contents of a document.

Number of Periods					
Theory	Practical				
12	18				

Tell the students about **Styles** while demonstrating the steps involved in the following:

- Styles and Formatting Window
- Fill Format Mode
- Creating New Styles from Selections
- Updating Styles from Selections
- To create a New Style by Drag-and-Drop

Tell the students about **Image** while demonstrating the steps involved in the following:

- Inserting an image from a file
- Inserting a Scanned Image
- Inserting Graphics from the gallery with Drag-And-Drop
- Inserting Graphics from OpenOffice Draw or Impress
- Inserting a Calc Chart into a Text Document
- Resize image
- Delete image
- Arranging images

- Crop image
- Positioning image

Tell the students about **Template** with the students along with the steps involved in creating a new template.



Touchpad IT-402-X (Lesson Plan)

Explain to the students about **Modifying Default Template** and demonstrate the steps involved in the following:

Using the template

Updating a template

• Resetting default templates

Explain to the students about Table of Contents and demonstrate the steps involved in:

Creating a table of contents

Updating a table of contents

Customizing a table of contents

Applying character styles

Demonstrate what is Mail Merge to students and explain the components of Mail Merge like:

Main Document

Data Source

Printing Address Labels

Extension

Ask the students some oral questions based on this chapter.

- Q. What is style?
- Q. What actions can you perform on a style?
- Q. How can you insert an image in Writer?
- Q. Explain template.
- Q. How can you modify a default template?
- Q. What is mail merge?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 105 in the main course book under Exercise.

2. Advanced Features of Spreadsheet

Teaching Objectives

Students will learn about

Consolidating Data
© Creating Subtotal

₩ What-If Analysis

Scenario

□ Link Data and Spreadsheets
 □ Cell Reference

Hyperlink
Sharing a Document

Teaching Plan

While While teaching this chapter, tell the students that Data is one of the most important source for analyzing or getting proper information.

Number o	f Periods
Theory	Practical
8	10

Explain the **Consolidating Data** to the students and the steps involved in combining cell contents with labelled screenshots.

Discuss with the students about the use of **Subtotal**. Also, share the steps involved in using the creating the same.

Share with the students the purpose of **What If Analysis** and the steps involved in using the tools like:

Scenario

Multiple Operations

Demonstrate to the students about the purpose of using **Goal Seek** and the various components:

Formula Cell

Target Value

Variable Cell

Shrink/ Maximize

 $\label{thm:explain} \textbf{Explain the objective of Solver in detail to the students and demonstrate the steps involved in its use.}$

Demonstrate to the students about the purpose of Link Data and Spreadsheets and steps involved in:

- Setting up Multiple Worksheets
- Inserting New Worksheets

Renaming Worksheets

Discuss with the students the use of Cell Reference and the steps involved in:

- Creating cell reference to other worksheets
 Cell referencing using mouse
- To reference a cell in another workbook

Share with the students the purpose of using Hyperlink and also explain what is:

Relative Hyperlink

Absolute Hyperlink

Also share the working with hyperlink with the students.

Demonstrate to the students how **Sharing a Document** can be done and the functions that can be performed on the same like:

- Setting up a Spreadsheet for sharing
- Opening a shared Spreadsheet

Saving a shared Spreadsheet

Extension

Ask the students some oral questions based on this chapter.

- Q. What is the meaning of consolidating the data?
- O. What is the use of subtotal?
- Q. What is the purpose of What If analysis?
- Q. What is Goal Seek and Solver?
- Q. What is Cell Reference used for?
- Q. What is a Hyperlink?
- Q. How to open/save/set up a shared spreadsheet?
- Q. What is the purpose of Find & Replace?
- Q. What is the purpose of Spelling and Grammar?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 140 and 141 in the main course book under Exercise.

3. More about Spreadsheet

Teaching Objectives

Students will learn about

- Recording Changes
- Reviewing Changes
- Macro
- Arguments Passed as Values
- Accessing Cell Directly

- Add, Edit & Format Comment
- Merging Versions
- Passing Arguments to a Macro
- Macros, Act Like Built in Functions

Number of Periods

Practical

(13)

Theory

(7)

Sorting

Teaching Plan

While teaching this chapter, tell the students record changes feature is used to track every edited cell by highlighting with a coloured border.

Explain the steps involved in the following to the students:

- Recording changes
- Edit comments
- Change the size of the comment
- Set print comment
- Comparing versions of a document
- Add a comment
- Formatting comments
- Delete a comment
- Review changes
- Merging versions

Define the meaning of Macro to the students and usage of the macro recorder to the students. Also, share the steps involved in following:

- Creating a macro function
- Argument passed as values
- Accessing cells directly

- Passing arguments to a macro
- Macro act like built-in functions

Demonstrate the meaning of sorting and the steps involved in applying so in data to the students.

Extension

Ask the students some oral questions based on this chapter.

- Q. What are recording changes?
- Q. Write the steps to:
 - a. Add a comment
 - c. Formatting comments
 - e. Delete a comment

- b. Edit comments
- d. Change the size of the comment
- f. Set print comment

- Q. What is Macro?
- Q. What is sorting?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 164 in the main course book under Exercise.

4. Database Management

Teaching Objectives

Students will learn about

- 🖾 Database Management System (DBMS) 🛛 🕼 Benefits of Database Management System
- Flements of Database
- Relational Database Management System(RDBMS)
- Components of Database Package
 Starting OpenOffice Base
- Basic Elements of 'Base' Table
 © Creating a Table
- Create Table by Using Wizard
 Create Table by Using Create View
- Modifying Table Design Entering Data into a Table
- Editing Data in a Table

 Fiding and Unhiding Columns
- Sorting.Data Validation
 Field Level Validation
- Relationship 🖙 Query
- Forms Report.

Teaching Plan

While teaching this chapter, tell the students that information is a collection of ordered and related data which is processed in a meaningful way.

Number o	f Periods
Theory	Practical
10	17

Explain the meaning of database management system with the help of case studies and examples to the students.

Share the benefits of database management system with the students like:

- Reduction in data redundancy
- Sharing of data
- Ensure data security
- Interactive interface

- Reduction in data inconsistency
- Enforcement of data standards
- Data integrity

Explain the elements of a database to the students with proper function of each.

Share the meaning and importance of the following to the students:

- Relational DBMS
- Components of database package (tables, queries, forms, reports)
- Basic elements of 'Base' table (field name, filed type, filed properties, key field, primary key, foreign key)

Tell the steps involved while performing the following actions in DBMS to the students:

Create a new database

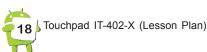
- Opening an existing database
- Creating a table (in design view, using wizard, create view)
- Deleting columns/fields
- Modifying columns/fields
- Entering data into a table

Editing data in a table

2 Entering data into a table

Sorting

Hiding/unhiding columns



Explain what is data validation and field level validation to the students using real life examples.

Show the meaning of relationship, query, forms and reports to the students in database using all the steps involved and examples of database.

Extension

Ask the students some oral questions based on this chapter.

- Q. What is database management system?
- O. What are the benefits of DBMS?
- Q. What are the elements of database?
- O. What is relational DBMS?
- Q. Write the components of database?
- Q. What is data validation?
- Q. What is relationship?
- Q. What is query?
- Q. What is report?
- O. What is a form?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 216 and 217 in the main course book under Exercise.

5. More on Database

Teaching Objectives

Students will learn about

Types of Database Commands

Insert, Update and Delete

Databases and Operators

Managing Query

Teaching Plan

While teaching this chapter, tell the students that in a database, structure of data can be defined & manipulated by using different commands.

Number of Periods					
Theory	Practical				
8	10				

Explain the meaning and importance of the following in a database to the students:

- Data Definition Language
 - Data Control Language

- Data Manipulation Language
- Transaction Control Language

Define data types and operators along with their description to the students.

Show the steps involved in doing these action to the students:

SQL create table

- Managing query (SELECT)
- Insert, update and delete records and statements

Extension

Ask the students some oral questions based on this chapter.

Q. Define:

a. DDL

b. DML

c. DCL

- d. TCL
- Q. Define data types and operator used in database.
- Q. What is the purpose of SELECT query?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 227 in the main course book under Exercise.

6. Web Application

Teaching Objectives

Students will learn about

Various Types of Impairment

Internet

Internet Connectivity Options

Data Transfer on Internet

■ Blog

Online Transaction

Importance of Secure Passwords

Networking Fundamentals

Internet Terminologies

Internet Access through WI-FI

Instant Messaging

Offline Blog Editor

Teaching Plan

While teaching this chapter, tell the students that technology plays a major role in overcoming the challenges faced by specially physically challenged people.

Number o	f Periods
Theory	Practical
(8)	11)

Explain the various types of impairment to the students along with the ease of access center in Windows/Accessibility box.

Tell the students about the networking fundamentals like benefits of networking.

Share the information about the different types of networks to the students:

Tell the students about network topology in detail:

Linear Topology

Bus Topology

Star Topology

WAN

• Ring Topology

LAN

Tree Topology

Mesh Topology



Explain the terms to the students like:

•	Internet	•	WWW	•	HTML
•	Website	•	Web page	•	Web browser
•	Web address	•	Domain name system	•	Web servers
•	URL	•	ISP	•	Modem
•	IP Address	•	Web Portal	•	Switch
•	Hub	•	Bridge	•	Router
•	Gateway	•	Hyperlink	•	Bandwidth

Show the students the internet connectivity options with examples:

WiredWirelessWi-Fi

Introduce the data transfer on internet including TCP/IP protocol to the students in easier language. Explain instant messaging, blog, offline blog editor, online transaction and e-commerce to the students in detail with using the correct examples.

Share the information about commonly used online applications with the students:

•	e-Learning	•	e-Governance	•	e-Banking
•	UPI	•	Online Exam	•	e-Reservation

Also, share the importance of secure password with the students for their own data safety concern.

Extension

Ask the students some oral questions based on this chapter.

- Q. Write about any four benefits of network.
- Q. Write any three features of WWW.
- Q. How data transfer takes place on the Internet?
- Q. Explain about e-Commerce.
- Q. List the name of any four blogs.
- Q. List the name of Toggle keys.
- Q. What is P2P architecture?
- Q. Explain any two wired and wireless internet connectivity option.
- Q. What is protocol? Explain TCP/IP and HTTPS protocols.
- Q. Write any five features of Online transaction.
- Q. Write any five characteristics of strong password.

Evaluation

After explaining the chapter, let the students do the exercises given on Page 278 in the main course book under Exercise.

7. Web Security & Workplace Safety

Teaching Objectives

Students will learn about

□ Fire

 □ Falls and Slips

Electrical Shocks and its Effects

First Aid

Case Study

Covid-19

□ Case Study□ Covid-19□ Accident□ Emergency

■ Hazards ■ Health and Safety

Teaching Plan

While teaching this chapter, tell the students that with the advent of technology, usage of Internet and its applications have also increased by many folds.

Number o	of Periods
Theory	Practical

Tell the students about the need of internet security by giving some examples.

Explain the Cyber threat (malware, virus, DoS Attack, Man in the Middle Attack, Spoofing, Phishing) to the students for better understanding of the topics.

Share the best practices for web security to the students along with examples:

- Identity protection
- Protect username and password
- Do not share personal information
- Secure online transaction
- Avoid using unsecured Wi-FI
- Don't accept unknown invitation
- Use antivirus
- Install firewall
- Password safe
- Use multi-factor authorization

Explain the importance of health & safety at workplace to the students along with the fire safety measures.

Share the meaning, measure, prevention and the related factors of the following to the students:

Falls & Slips

- Electrical Shocks
- Covid-19

Accident

Emergency

Hazard

Tell the students how to take care of their health and be safe.

Extension

Ask the students some oral questions based on this chapter.

- Q. What is the need of Internet security?
- Q. List any five cyber threats.
- Q. What is spyware? How you can prevent the attack of spyware?
- Q. What are the symptoms and effect of a malware?
- Q. Write few tips for having a strong password.
- Q. What are the measures to prevent an electrical shock?
- Q. What are the common reasons of an accident?
- Q. What do you understand by emergency?
- Q. Explain best practices of Web Security.
- Q. List a few fire safety measures.
- Q. Explain about Falls and Slips.
- O. What is a 'First Aid Kit'?
- Q. What is a Hazard?
- Q. Explain standard evacuation plan to be followed in an organisation.
- Q. How to identify that Website is secure or not?
- Q. List the steps to handle accidents.
- Q. What is a 'Firewall'?
- Q. What is a Password?
- Q. What is a Spam?
- Q. Explain about Trojan Horse.

Evaluation

After explaining the chapter, let the students do the exercises given on Page 308 in the main course book under Exercise.