

# Dental Assistant: Dental Science 1

Exam Information	Description																						
<b>Exam number</b> 720  <b>Items</b> 52  <b>Points</b> 66	<p>The Dental Science 1 industry certification exam assesses learners' preparedness to assist a dentist or dental hygienist in performing the functions of a dental practice. The exam evaluates skills in chairside assisting, patient preparation, front office functions, selected dental office laboratory procedures, and an introduction to radiology.</p>																						
<b>Prerequisites</b> None  <b>Recommended course length</b> One semester  <b>National Career Cluster</b> Health Science NCHSE Health Science Bundle  <b>Performance standards</b> Included (Optional)  <b>Certificate available</b> Yes	<b>Exam Blueprint</b> <table> <tr> <th>Standard</th><th>Percentage of exam</th></tr> <tr> <td>1. Field of Dentistry</td><td>8%</td></tr> <tr> <td>2. Basic Dental Equipment</td><td>12%</td></tr> <tr> <td>3. Ethical &amp; Legal Behavior</td><td>5%</td></tr> <tr> <td>4. Personal Safety</td><td>9%</td></tr> <tr> <td>5. Infection Control</td><td>15%</td></tr> <tr> <td>6. Oral Anatomy</td><td>27%</td></tr> <tr> <td>7. Identify the Infectious Process</td><td>6%</td></tr> <tr> <td>8. Preventative Dentistry Program</td><td>6%</td></tr> <tr> <td>9. Skills and Responsibilities</td><td>9%</td></tr> <tr> <td>10. Perform Basic Life Support Skills</td><td>3%</td></tr> </table>	Standard	Percentage of exam	1. Field of Dentistry	8%	2. Basic Dental Equipment	12%	3. Ethical & Legal Behavior	5%	4. Personal Safety	9%	5. Infection Control	15%	6. Oral Anatomy	27%	7. Identify the Infectious Process	6%	8. Preventative Dentistry Program	6%	9. Skills and Responsibilities	9%	10. Perform Basic Life Support Skills	3%
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## Standard 1

Students will examine the field of dentistry.

**Objective 1** Describe the following dental health team members (including educational requirements, professional organizations, responsibilities, and licensure):

1. Dentist
2. Dental Hygienist
3. Dental Assistant
4. Administrative Assistant
5. Dental Laboratory Technician

**Objective 2** Describe the following areas of specialization in dentistry:

1. Dental Public Health
2. Endodontics
3. Oral & Maxillofacial Surgery
4. Orthodontics
5. Pediatric Dentistry
6. Periodontics
7. Prosthodontics

**Standard 1 Performance Evaluation included below (Optional)**

## Standard 2

Students will identify areas of the dental office and basic dental equipment.

**Objective 1** Identify and describe the following areas of the dental office:

1. Dental Operator (treatment area)
2. Reception area
3. Administration/Business area
4. Sterilization area
5. Dental laboratory
6. Dentist's private office
7. Consultation room
8. Dental staff lounge

**Objective 2** Identify and describe proper use and maintenance of the following equipment:

1. Operator stool
2. Assistant stool

3. Dental chair
4. Operating light
5. Air water syringe
6. Oral evacuation system
7. Curing light
8. Triturator/Amalgamator
9. Rheostat (foot control)
10. X-ray systems
11. Autoclave
12. Ultrasonic cleaner

## Standard 2 Performance Evaluation included below (Optional)

### Standard 3

Students will differentiate appropriate ethical and legal behavior in a dental setting.

- Objective 1** Define the difference between ethics and laws including importance of professional and personal ethics in the workplace.
- Objective 2** Discuss ethical and legal responsibilities for the dental healthcare worker
- Objective 3** Identify standards of the Health Insurance Portability and Accountability Act/HIPAA and discuss the need to protect the patient's privacy.
- Objective 4** Explain the purpose of the State Dental Practice Act and how it applies to the role of the dental assistant. Compare and contrast the levels of supervision.
  1. Direct Supervision
  2. Indirect Supervision
  3. General Supervision

## Standard 3 Performance Evaluation included below (Optional)

### Standard 4

Students will demonstrate personal safety procedures based on Occupational Health and Safety Administration (OSHA) and Centers for Disease Control (CDC) guidelines.

- Objective 1** Explain the OSHA Bloodborne Pathogen Standard including:
  1. Training requirements
  2. Employee medical records
  3. Exposure protocol
- Objective 2** Outline the OSHA Hazard Communication Standard including:
  1. Training program

2. Chemical inventory
3. Locate OSHA posters and SDS sheets on site

**Objective 3** Identify the roles of government agencies.

1. Occupational Safety and Health Administration- OSHA
2. Center for Disease Control and Prevention- CDC
3. National Institute For Occupational Safety and Health- NIOSH
4. Environmental Protection Agency- EPA
5. Food and Drug Administration- FDA

**Standard 4 Performance Evaluation included below (Optional)**

## Standard 5

Students will demonstrate infection control protocol.

**Objective 1** Identify the components of the chain of infection

1. Virulence/infectious agent
2. Number of microorganisms
3. Susceptible host
4. Portal of entry

**Objective 2** Identify modes of infection transmission in the dental office.

1. Direct transmission
2. Indirect transmission
3. Airborne transmission
4. Parenteral transmission
5. Bloodborne transmission

**Objective 3** Outline standards for prevention of disease transmission

1. Prevent cross-contamination
  - a. Patient to dental team
  - b. Dental team to patient
  - c. Patient to patient
  - d. Dental office to community
  - e. Community to dental office
2. Maintain aseptic conditions

**Objective 4** Compare the different types of dental waste and appropriate waste disposal.

1. General waste
2. Hazardous waste
3. Infectious/contaminated waste
  - a. Blood/blood-soaked materials
  - a. Pathological waste

- b. Sharps, needles, burs

## Standard 5 Performance Evaluation included below (Optional)

## Standard 6

Students will identify intra-oral anatomy and surrounding structures.

**Objective 1** Identify teeth by name, location, and permanent, primary, or mixed dentition.

**Objective 2** Identify anatomical parts, tissues, and surfaces of a tooth.

1. Anatomical parts
  - a. Clinical crown
  - b. Anatomical crown
  - c. Root including the apex
2. Tissues
  - a. Enamel
  - b. Cementum
  - c. Dentin
  - d. Pulp
3. Supporting structures
  - a. Periodontal ligaments
  - b. Alveolar bones
  - c. Gingiva

**Objective 3** Identify primary and permanent teeth using the Universal Tooth Numbering System.

**Objective 4** Identify surfaces of the teeth.

1. Mesial
2. Distal
3. Facial
  - d. Labial
  - e. Buccal
4. Incisal
5. Occlusal
6. Lingual

**Objective 5** Identify major landmarks of the oral cavity and surrounding structures.

1. Maxillary sinus
2. Salivary glands and ducts
3. Maxilla
4. Mandible
5. TMJ – Temporal Mandibular Joint
6. Incisive papilla
7. Rugae
8. Uvula

9. Frenulum
10. Soft palate
11. Hard palate
12. Tongue
13. Teeth
14. Oral mucosa
15. Temporal bone
16. Trigeminal nerve

**Objective 6** Describe genetic and developmental factors that can affect dental development.

1. Tori
2. Supernumerary
3. Enamel dysplasia
4. Cleft palate
5. Cleft lip
6. Tongue-tied
7. Anodontia
8. Microdontia
9. Macrodontia

**Standard 6 Performance Evaluation included below (Optional)**

## Standard 7

Students will identify the infectious process of dental caries and other diseases of the oral cavity.

**Objective 1** Outline the dental caries process:

1. Acids in plaque and saliva attack the tooth
2. Calcium and phosphate are dissolved from the enamel (demineralization)
3. Fluoride, calcium, and phosphate are re-deposited into the tooth (remineralization)

**Objective 2** Describe the clinical characteristics of periodontal disease:

1. Gingivitis
  - a. Red Tissues
  - b. Swollen Tissues
  - c. Tissues Bleed Easily
2. Periodontitis
  - a. Inflammation of periodontium
  - b. Mobility
  - c. Pain
  - d. Pus

**Objective 3** Discuss the diseases/conditions of the oral cavity and tongue including:

1. Oral cancer
2. Candidiasis (thrush)
3. Cellulitis
4. Fissured tongue
5. Geographic tongue
6. Glossitis
7. Herpes
8. “Meth Mouth”
9. Eating Disorders

**Standard 7 Performance Evaluation included below (Optional)**

## Standard 8

Students will identify components of a comprehensive preventive dentistry program including patient education.

**Objective 1** Explain the parts of a preventive dentistry program and their effects on oral conditions.

1. Nutrition
  - a. Dental decay is directly linked to the presence of dietary sugars (sucrose) in the diet.
  - b. Acids in foods/beverages can erode dental enamel.
2. Plaque control
  - a. Disclosing
  - b. Tooth brushing methods-Bass
  - c. Flossing
3. Fluoride therapy
4. Dental check-ups

**Objective 2** Identify different products used for oral hygiene and their uses.

1. Toothbrushes
2. Dental floss/tape
3. Interdental aids
4. Toothpastes
5. Mouth rinses

**Standard 8 Performance Evaluation included below (Optional)**

## Standard 9

Students will be able to perform the skills and responsibilities of a dental assistant in the front office.

**Objective 1** Identify the differences between verbal and nonverbal communications.

1. Verbal-words spoken
  - a. Words
  - b. Listening skills
  - c. Voice inflection
2. Non-verbal-body language
  - a. Facial expressions
  - b. Appearance
  - c. Gestures
  - d. Mannerisms
  - e. Attitudes
  - f. Actions

**Objective 2** Describe good phone courtesy.

1. Smile
2. Don't chew gum or eat
3. Speak directly into the receiver
4. Speak clearly and slowly
5. Answer promptly
6. Greet patient-identify yourself and the practice
7. Ask how you can help the caller

**Objective 3** Outline the process of scheduling appointments.

1. Guidelines for scheduling-units of time
2. Confirmation of appointments
3. Re-call

**Objective 4** Discuss the functions of computerized practice management systems.

1. Patient registration
2. Scheduling
3. Charting
4. Progress notes
5. Radiographs

**Objective 5** Identify the data gathering process and prepare a patient record.

1. Registration form
2. Medical-dental health history form
3. Clinical examination form
4. Progress note form
5. Treatment plan

**Objective 6** Define terminology related to insurance.

1. Carrier

2. Co-insurance
3. Deductible
4. Dependent
5. Eligibility
6. Exclusions
7. Maximum
8. Provider
9. Subscriber

**Objective 7** Learn the common dental procedure codes

1. Diagnostic: D0100–D0999
2. Preventive: D1000–D1999
3. Restorative: D2000–D2999
4. Endodontics: D3000–D3999
5. Periodontics: D4000–D4999
6. Removable Prosthodontics: D5000–D5899
7. Maxillofacial Prosthetics: D5900–D5999
8. Implant Services: D6000–D6199
9. Fixed Prosthodontics: D6200–D6999
10. Oral Surgery: D7000–D7999
11. Orthodontics: D8000–D8999
12. Adjunctive General Services: D9000–D9999

## Standard 10

Students will be able to perform basic life support skills.

**Objective 1** Describe the signs and symptoms of common medical emergencies and describe how to respond to them.

1. Symptom: what a patient tells you regarding how they feel
2. Sign: what you observe in a patient
3. Common emergencies include:
  - a. Airway obstruction/choking
  - b. Syncope/fainting
  - c. Postural hypotension
  - d. Angina/chest pain
  - e. Acute myocardial infarction/heart attack
  - f. Stroke/CVA
  - g. Hyperventilation
  - h. Asthma attack
  - i. Allergic reaction
  - j. Seizure
  - k. Diabetic shock

- l. Hyperglycemia
- m. Hypoglycemia

**Objective 2** Demonstrate how to take, record, and monitor vital signs using automated systems:

1. Blood pressure
2. Pulse

**Standard 10 Performance Evaluation included below (Optional)**

## Dental Science 1

Performance assessments may be completed and evaluated at any time during the course. The following performance skills are to be used in connection with the associated standards and exam. To pass the performance standard the student must attain a performance standard average of 8 or higher on the rating scale. Students may be encouraged to repeat the objectives until they average 8 or higher.

**Student's Name:** \_\_\_\_\_

**Class:** \_\_\_\_\_

## Performance standards rating scale

0	Limited skills	2	→	4	Moderate skills	6	→	8	High skills	10
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### Standard 4 – Personal Safety

**Score:**

- Demonstrate proper use of PPE and correct handwashing technique.
- Obtain Hepatitis B vaccination or provide signed declination form.
- Demonstrate methods of sterilization and disinfection

### Standard 9 – Skills & Responsibilities

**Score:**

- Instruct a patient in oral hygiene.
- Prepare a patient record.
- Seating and dismissing patients.

### Standard 10 – Perform Basic Life Support Skills

**Score:**

- Obtain current CPR certification.

### Workplace Skills

- Describe the characteristics of a professional dental assistant.
- Professional appearance
- Teamwork
- Attitude
- Dedication

- Responsibility
- Initiative
- Legal requirements/confidentiality
- Personal qualities
- Courtesy and respect for patients and team members
- Attendance of work hours
- Professional communication (grammar)
- Problem-solving
- Critical thinking
- Dependability
- Accountability

**Performance standard average score:**

**Evaluator Name:** \_\_\_\_\_

**Evaluator Title:** \_\_\_\_\_

**Evaluator Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_