1. List Existing Topics:

```
bin/kafka-topics.sh --zookeeper localhost:2181 --list
```

This will display the names of all currently available Kafka topics.

2. Create a Topic named "test1" with 3 Partitions:

```
bin/kafka-topics.sh --zookeeper localhost:2181 --create --topic test1 --
partitions 3 --replication-factor 1
```

This creates a topic called "test1" with 3 partitions and a replication factor of 1 (meaning messages will be replicated to only one broker).

3. Create a Topic named "test2" with 2 Partitions:

```
bin/kafka-topics.sh --zookeeper localhost:2181 --create --topic test2 --
partitions 2 --replication-factor 1
```

This creates another topic named "test2" with 2 partitions and a replication factor of 1.

4. List Available Topics and Partition Details (again):

```
bin/kafka-topics.sh --zookeeper localhost:2181 --list
```

This command will display the updated list of topics, including "test1" and "test2" with their partition details.

5. Create 3 Kafka Console Consumers to Topic "test1":

```
kafka-console-consumer --bootstrap-server localhost:9092 --topic test1 --
group-id my-group (repeat twice more)
```

- This creates three separate consumer instances (open three terminal windows) that will subscribe to the "test1" topic.
- `--bootstrap-server localhost:9092`: Specifies any of the running Kafka brokers for initial connection.
- `--topic test1`: The target topic to subscribe to.
- `--group-id my-group`: Assigns a consumer group ID (optional here, but we'll use it later).

6. Create a Kafka Console Producer to Topic "test1":

```
kafka-console-producer --bootstrap-server localhost:9092 --topic test1
```

This opens a producer prompt where you can type messages (one per line) and press Enter to publish them to the "test1" topic.

7. Send 10 Messages to Topic "test1" Using the Console Producer

Type ten lines of text and press Enter after each line in the producer terminal window.

8. Observe Console Consumer Output

Each consumer window should now start receiving the messages you produced in step 7. This demonstrates how messages are delivered to all consumers in the same group.

9. Close the 3 Console Consumers (Ctrl+C in each window)

Terminate the three consumer windows by pressing Ctrl+C in each window.

10. Create 3 Kafka Console Consumers to Topic "test1" using a consumer group named "group1"

```
kafka-console-consumer --bootstrap-server localhost:9092 --topic test1 --
group-id group1 (repeat twice more)
```

This creates three new consumer instances with a different group ID ("group1"). These consumers won't have access to the messages produced earlier as they belong to a separate group.

11. Produce 10 Messages using the Console Producer Created in Step 7

Send another ten messages through the producer in the same terminal window.

12. Observe the Output of Consumers Created in Step 10

These consumers will start receiving the newly produced messages because they belong to the "group1" group. Since they are separate from the consumers in step 5, they won't see the previous messages.